ABSTRACT OF

The Goulstonian Lectures

ON THE

CHEMICAL PHYSIOLOGY OF THE ANIMAL CELL.

Delivered at the Royal College of Physicians on Tuesday, March 7th,

BY W. D. HALLIBURTON, M.D., F.R.C.P. LOND., F.R.S.,

PROFESSOR OF PHYSIOLOGY, KING'S COLLEGE, LONDON.

LECTURE I.

THE MICRO-CHEMISTRY OF THE CELL.

[IN his preliminary remarks Dr. Halliburton thanked the College for the honour conferred on him, spoke of the important influence of the cell theory in all branches of science and alluded to the difficulties attending chemical investigations on living things. He further announced that the three lectures he had to give would deal with (1) the micro-chemistry of the cell; (2) the proteid constituents of the nucleus and cell protoplasm; and (3) the coagulation of the blood. He then proceeded as follows:]

The earlier observers on the animal cell, following the lead of the botanists, described a cell wall as one of its necessary constituents. We now know that a cell wall is an exception rather than the rule, and our definition of the animal cell is that of a mass of living substance or protoplasm containing a nucleus in its interior. To this we must now add, at least for some cells, that another body called the "attraction sphere" by van Beneden is also present. This attraction sphere becomes intermingled with the nucleus during the progress of cell division, and no doubt it is this body rather than the nucleus that takes the lead in the division of a cell into two. The nucleoli are believed to be collections of reserve material which enter into solution when cell division commences and perhaps contribute to the formation of the thread-like structures into which the substance of the nucleus is resolved. There can also be little doubt that the nucleus exercises a controlling influence on the nutrition of the cell. By certain fluids a vegetable cell can be broken up or plasmolysed into separate little masses of protoplasm. Those fragments which are without a nucleus are no longer able to form starch.

Passing now to the functions of the cell as a whole, we find a great contrast between those exercised by the single cell of the unicellular organism and the many cells of the multicellular animal. To the anatomist the single egg cell or the amœba is an extremely simple object. To the physiologist, on the other hand, simplicity of structure means an increased difficulty in understanding function. In the higher animals certain cells are set apart specially to perform one function, certain other cells to perform another; some, for instance, are concerned in muscular contraction, others in elaborating secretions, others in reproduction and so forth. But in such an animal as the amœba all these functions—movement, secretion, digestion, excretion and multiplication—are performed by one cell. In the higher animals the various functions are unravelled from each other, but in the amœba, looking at its apparently simple structure, it is difficult to realise the potentialities of, and the variety of functions inextricably blended in, the little mass of living jelly. Whilst a cell is alive it is always undergoing certain chemical changes. It is in a state of unstable chemical equilibrium. The series of changes beginning with assimilation and ending with excretion is what is known as metabolism, and, adopting Gaskell's nomenclature, constructive metabolism may be termed "anabolism," and destructive metabolism "katabolism." Microscopic investigation has shown us that protoplasm itself is not homogeneous; it is not even merely loaded with granules, but pervading it is a network of irregular arrangement, in such an undifferentiated cell as the white blood-corpuscle, and regular arrangement, in such cells as muscular fibres, where the movement is limited to one direction. Different histologists have given different names to these two portions of protoplasm. The most convenient names are those introduced by Schäfer: he calls the spongework of fibrils "spongioplasm," and the more fluid homogeneous part which flows in or out of the spongioplasm "hyaloplasm." Carnoy believes that the reticulum itself consists of a material called "plastin," a substance the nature of which we shall have to inquire into later on. In addition to this there are the granules embedded in the protoplasm which stain differently with different reagents; and in some cells there are vacuoles or spaces filled with a watery albuminous fluid, sometimes acid and sometimes alkaline. The contents of granules and vacuoles are termed "paraplasm." It will be convenient to take the contents of the vacuoles first. In unicellular organisms, like the amœba, solid particles when ingested are surrounded with fluid; this fluid appears to play the *rôle* of a digestant poured out by the animal in its attempts to dissolve the solid particles. Other vacuoles, such as the contractile vacuole of the amœba, are excretory. We next ask, What is the composition of the granules that pervade the protoplasm? These are sometimes of a fatty nature and are well seen in the leucocytes after a diet containing fat; they stain black with osmic acid. Sometimes, especially after a carbohydrate diet, and particularly in liver cells, they are composed of glycogen and stain brown with iodine; in some unicellular animals they appear to be of an inorganic nature; but by far the most constant granules are those which, like the rest of the protoplasm, are albuminous or proteid in character. The behaviour of these to stains shows that these again may be subdivided into various classes. Proteid, in fact, constitutes the main bulk of the solid matter in all living parts of organisms, animal and vegetable. The proteids obtainable fall into two chief groups: the globulins and the nucleo-albumins. The characters of the individual members of these groups I shall take up in my next lecture. But other substances besides proteid are obtainable from cells. Of these the most constant are *lecithin*, a phosphorised fat, *cholesterin*, a monatomic alcohol, and a small percentage of inorganic matter in which calcium, magnesium and the alkaline metals are combined with phosphoric acid and chlorine to form phosphates and chlorides respectively.

Our next consideration is a more profound one, and that is: In what condition are these substances present in the cell? Are they separate, merely in a state of chemical admixture, or are they combined one with another? Here we enter the realm of uncertainty. We can only say that the almost constant association of proteid with lecithin suggests something more than mere admixture, and that the difficulty of separating proteid from inorganic salts, especially from calcium, indicates very forcibly that they are combined together. In addition to this, however, there are very strong indications that the proteid of a living cell is in a different condition from the proteid of a dead cell. The distinction between living and non-living proteid was first suggested by Rudolphi in 1821 and emphasised by John Fletcher in 1837, but it was not until 1875 that an intelligible theory to explain such difference was advanced by Pflüger. The non-living proteids, such as are contained in white of egg, are stable and indifferent to neutral oxygen; but when these proteids are assimilated—that is, become part of a living cell—the molecules of proteid live by breathing oxygen—not necessarily oxygen from without, as frogs kept in chambers free from oxygen will continue to live for many hours and give off carbonic acid formed from the oxygen stored in the tissues. The assimilation of a proteid is probably due to the formation of ether-like combinations between the molecules of living proteid and the isomeric molecules of the food proteid, water being eliminated, this process of polymerism producing large and heavy, but still simple, molecules. In this process the nitrogen of the non-living proteid leaves the hydrogen with which it is combined in the form of amidogen (NH_2) and enters into combination with carbon to form the more unstable substance cyanogen (CN). We thus find uric acid, creatin, guanin &c. as products of proteid metabolism, whilst none of such cyanogen-containing bodies are obtainable from non-living proteids.

Leaving this question for a time and passing to other methods of research, the inquirer should next ask the chemical meaning of the staining produced by the pigments used in histological investigation. Staining reagents are primarily employed to bring out structure; the cells as they occur in nature are too transparent to allow of a thorough investigation of their contents. They must be fixed by such reagents as osmic acid, that produce as little change as possible in their appearance, and their structure can be

revealed by the subsequent use of pigments, because certain of their parts are more deeply stained than others, the nucleus, as a rule, standing out conspicuously. It cannot be doubted that this is due to differences in their chemical composition.

The histologist's staining reagents fall into two main groups:—1. *Metallic compounds*, such as silver nitrate, gold chloride and osmic acid. In this case the staining is produced by the reduction by the tissue of the compound and the deposition of the metal in the situation where the reduction has occurred. 2. *Dyes*, such as logwood, carmine &c. Our chemical knowledge of many of these stains is not very great; but there is a considerable amount of chemical knowledge concerning one important class of dyes—namely, those known as the aniline dyes. The methods of using these reagents are two in number: some are applied directly to the preserved tissue, or, it may be, to the fresh tissue just removed from the body, whilst in other cases the pigment is injected into the circulation and its effects observed when the animal is subsequently killed. Both methods have yielded valuable results.

[The lecturer then gave several instances in illustration.]

Ehrlich's experiments with methylene blue and similar pigments have greatly assisted our understanding of oxidation processes in different tissues. If a saturated solution of methylene blue is injected into the circulation of a living animal, and the animal killed a few minutes later, it is found on opening the body that most of the organs present their natural colour, although the blood is dark blue. On exposure to the oxygen of the air all the organs in time become blue. The avidity of the tissues for oxygen has been so great that they have been able to decompose the methylene blue molecule, forming a colourless reduction product which on exposure to the air takes up oxygen and becomes blue again. From such an experiment one can understand the power of the tissues in the reduction of oxyhæmoglobin, and moreover the fact that the different tissues vary in tint in the methylene blue experiments enables us to localise those situations where reduction is most actively carried on. There appears to be a great future in the place that aniline dyes will occupy in elucidating physiological and pathological problems. Dr. Sheridan Delépine divided aniline dyes into two classes; acid fuchsin may be taken as a type of the first, basic fuchsin of the second. The first class stains deeply the most differentiated, the second the least differentiated portions of cells. In a drop of blood the red corpuscles are most deeply stained by acid fuchsin, the leucocytes being but faintly stained, whilst the nuclei are not stained at all. If basic fuchsin is used, the nuclei are stained most deeply, the protoplasm of the leucocytes to a less extent, and the red corpuscles least of all.

[The lecturer then proceeded to give a more detailed summary of Ehrlich's discoveries, and continued:]

But my chief object in dwelling on these so long is to clear the way for the subject I propose to treat in the third lecture, the coagulation of the blood, as the behaviour of the white corpuscles in that process lies at the very root of the matter. I next propose to sketch two other lines of research, with their results, in which micro-chemistry has played a conspicuous part. I refer to the detection of iron and phosphorus in the cells. Hæmoglobin has long been known as a proteid-like substance which differs from other proteids in containing iron. It is undoubtedly the principal iron-containing constituent of the body. In recent years other iron-holding compounds have been found in cells; and these appear to be either forerunners of hæmoglobin or the result of its disintegration. This subject has been taken up by Quincke, Zaleski and Bunge on the continent, by Drs. Mott and Hunter in this country, and by Macallum in Canada. Without treating the subject in the chronological order of discovery we may take Bunge's work as a very convenient starting point. He found in the yolk of the hen's egg a proteid-like substance which, like the chief chemical constituent of cell nuclei, contains a high percentage of phosphorus. It is, in fact, a nuclein, but more than that, for its molecule contains iron in addition. From the very reasonable supposition that this material is the mother substance of the blood pigment Bunge named it "hæmatogen." Hæmatogen is also found in milk in small quantities and can be further separated from many vegetable tissues which are used as food. The resemblance to the nuclein of cell nuclei suggested that perchance the nuclei also contain iron, and this question was taken up by Macallum. Although probabilities pointed to the nuclei as the situation where the iron occurs, the chain of evidence was not complete until the micro-chemical methods next to be mentioned actually demonstrated its presence there, and it is to Quincke, Zaleski and Macallum that we owe these methods. Zaleski recommends the blue or green colour produced with potassium ferro- or ferri-cyanide and hydrochloric acid. Macallum, using alcohol-hardened tissues, soaked them for varying periods in ammonium sulphide solution, and found that the nuclei were coloured greenish; this after some weeks became a rusty brown, owing to the formation of ferric oxide. This was true for all cells examined, including those in situations like epithelium and cartilage, where there could have been no possible contamination with hæmoglobin. The fact that the chromatin masses in the cells during their transference to the fœtus from the placenta also give similar reactions is another proof that this is the method by which the fœtus receives its supply of iron; and, further, the nuclei of vegetable cells do not differ from animal cells in the presence of iron within them.

Passing now to the other side of the problem, from the forerunners of hæmoglobin to the products of its disintegration, we find that the liver has been the chief field where investigators have by similar methods advanced our knowledge. There are certain conditions in which the destruction of portal blood can be experimentally increased, as by the administration of the drug toluylendiamine (Engel, Kiener, Hunter); the importance of this experiment arises from the similarity between the effects observed and those found in nature's experiment, the disease of pernicious anæmia. In these conditions of excessive blood destruction chemical analysis reveals increased accumulation of the iron in the liver and in some cases in the spleen; also chemico-histological research shows the portal zones of the liver lobules to be crowded with albumino-ferruginous granules, and clinical observation harmonises with the foregoing in the increased colouration noted in the urine produced by urobilin, an iron-free constituent of the blood pigment (Mott). The liver, however, is not merely the seat of blood destruction, but it is also the seat of, at any rate, the beginning of hæmoglobin formation. Bunge has demonstrated most conclusively that iron is present in greater proportions in the livers of new-born animals than in older ones; it thus acts as a storehouse of iron subsequently used in the formation of red corpuscles; and Delépine believes that this function persists throughout life. Iron, so far as our bodies are concerned, is a very precious metal; the intake is usually small, as also is the output. There are other practical aspects of this iron question which, when speaking to physicians, I feel bound to notice in passing. First, in relation to diet, especially of young children, it is important that these should have, after a certain time, food which contains a proper proportion of the hæmatogenous constituent. The formation of blood, as of the other tissues, is at this time much more active than at later periods in life. Experiments on animals show that they rapidly become anæmic and waste when deprived of hæmatogen, even though inorganic compounds of iron are given instead. They enter the world with a store of iron in their livers—an extra supply derived from the maternal tissues to set them up for the first few weeks or months. They can, therefore, live for this time and thrive perfectly well on milk, poor though it is in hæmatogen; but after this time—a time which varies in different animals—it is a necessity that further hæmatogen should be administered. It may be given in various forms, for there appear to be many varieties of hæmatogen, and in animals this is usually obtained from vegetable food. There is no doubt that the anæmia which is seen in children who are weaned late is in part the result of this poorness of milk in hæmatogen. This leads me to speak in the next place of the administration of iron medicinally. The quantity of iron in the whole body is only three grammes, and this amount is taken many times over during treatment. Bunge explains the usefulness of iron in chlorosis by its forming iron sulphide in the intestines, removing in this way excess of sulphur from the body; in chlorosis there are excessive fermentation processes in the alimentary canal, and large quantities of sulphuretted hydrogen are formed, which destroy the organic compounds of iron that form hæmoglobin; the administration of iron thus prevents this destruction of hæmatogen. I cannot but think that this explanation, though accounting for the facts in part, does not contain the whole truth. As Landwehr points out, it hardly explains the limitation of the disease to the female sex and the period of early adolescence. Landwehr's own explanation, in which the substance he discovered and named "animal gum" plays a conspicuous part (and according to him does so in most physiological processes), is certainly not so feasible as Bunge's, and thus it becomes of great scientific importance that the truth of the hypothesis

should be put to the test of experiment. This has already been done in a few cases by Dr. Hale White. He has treated cases of chlorosis with hydrochloric acid, a substance which undoubtedly lessens putrefactive processes; but although the patients improved somewhat they did not mend any more rapidly than others who were simply treated with rest in bed and wholesome food. Dr. Mott suggested to me that attempts should be made with bismuth; this, like iron, forms an insoluble sulphide and, if Bunge's theory is true, ought to be as beneficial in anæmia as iron itself. I am not aware that this has yet been done.

But I must now leave the question of iron and pass on to the other element with the micro-chemical detection of which we have to deal—namely, phosphorus. As has been already mentioned, it is in the nucleus that the most important of these phosphorised proteid-like substances chiefly occur.

[The lecturer then gave details of the histology of the nucleus, and continued:]

Histology teaches us the complicated nature of the nuclear structures; the various names of the materials found were originally given from their microscopic appearances rather than from their chemical properties. The method of gastric digestion enables us to obtain nuclein in large quantities because the rest of the cell is dissolved. Nuclein is, in fact, a substance of which there is a considerable amount of accurate chemical knowledge. But there is another micro-chemical method which promises to be of as great value as that of gastric digestion, and it is to this that I have been leading up. It has only been quite recently introduced, and its object is the microscopic localisation of phosphorus. Lilienfeld and Monti[1] are the workers to whom we owe the method, and it consists in taking sections or teased portions of fresh tissues and organs and soaking them in a solution of ammonium molybdate. If phosphorus is abundant and present in the form of simple compounds like phosphates, the yellow colour of the preparations is visible to the naked eye within a few minutes; whereas, if the phosphorus is present in a more complex union the time required is longer and the microscope may be necessary to detect the yellow colouration. After this the sections are transferred to a 20 per cent. solution of pyrogallol dissolved either in water, or, which is better, in ether. The sections are dehydrated, clarified, and mounted in Canada balsam. The action of the pyrogallol is to reduce the phospho-molybdate, and the resulting colouration is brown or black according to its intensity.

[Lilienfeld and Monti's chief results were then summarised. Amongst other instances, the lecturer remarked:]

In nervous tissues, as one would expect from the richly phosphorised nature of their constituents, the staining was very intense, and in nerve cells the cell protoplasm was stained even more deeply than their nuclei. In conclusion, let me, in a few general terms, sum up what I have been saying. We have followed a number of divergent lines, all, however, starting with the cell, and all further connected by the link of micro-chemical investigation; but they have led us here and there into digressions in which the cell, as such, has been left far behind. Let me now proceed to gather up these scattered strands. We have seen that, in order to obtain a chemical knowledge of the cell, it is necessary to have, in the first place, an accurate knowledge of its anatomy, but that the histological methods of staining and so forth depend on a chemical basis. The main substance of the cell is proteid, and this proteid when in the living cell is intra-molecularly different from that in non-living protoplasm. In addition, there are smaller quantities of lecithin, cholesterin and inorganic salts. As the result of their vital activity, cells form various products; some of these, like carbonic acid and urea, are the result of oxidation, and these products of destructive metabolism leave the cell and are ultimately got rid of by the excretory organs. Others, like glycogen and fat, may be for a time stored up in the protoplasm, and it has long been known that these can be detected by the use of iodine and osmic acid respectively. More recent micro-chemical methods have taught us that the important elements iron and phosphorus can be also localised in the cell or in its nucleus, and on account of the newness of these investigations I have dealt with them at considerable length, pointing out, on the way, what I conceive to be some of the practical bearings of the results of such inquiries. But in addition to such facts there are others concerning which the present state of our knowledge does not allow us to pronounce positive chemical opinions, and here I would again allude to the important work of Ehrlich on the behaviour of protoplasmic granules to the aniline dyes. The fact that these dyes are, some acid, some alkaline, and some neutral, would seem to indicate corresponding differences in the reaction of the granules themselves. The reaction of living protoplasm as a whole is alkaline, but there are various acid products formed as the result of protoplasmic activity, such as carbonic acid, lactic acid, uric acid, and in one well-marked case that of the gastric cell, hydrochloric acid. It appears to me more than probable that during life the reaction of the protoplasm or of parts of the protoplasm is a changing one; the reaction may be in as unstable a condition of equilibrium as the other factors of cell life are. We know that when the circulation ceases and the cells can no longer build themselves up from new material, but are still sufficiently living to continue their retrogressive or katabolic changes, they become acid from the accumulation of such substances as lactic acid or from the formation of acid phosphates. This tendency to become acid is being constantly corrected by anabolic or assimilative changes during healthy cell life, and it seems quite possible that in Ehrlich's staining processes we have an actual proof of this condition of unstable chemical reaction; this appears to be very strikingly confirmed by a recent experiment of Hardy and Kanthack,[2] who found that eosinophile cells after feeding on bacteria become amphophile. But, leaving such speculative propositions and coming to our positive knowledge, none can deny the enormous impetus that has been given to chemical physiology by the combination of the use of the microscope with that of chemical reactions. Valuable as micro-chemistry is, however, as a means of research, it cannot go very deeply into the matter, and happily we can supplement the knowledge so obtained by the methods of macro-chemistry. We have already made the acquaintance of nuclein, the chief material in the nucleus, and of the various proteids contained in the cell protoplasm, and it will be my duty in my next lecture to develop this aspect of the subject more fully.

[1] Zeitschrift der Physiologischen Chemie, xvii.

[2] Proceedings of the Royal Society, vol. lii., p. 270.

The Milroy Lectures

ON

CHANGES OF TYPE IN EPIDEMIC DISEASES.

LECTURE III.

Delivered at the Examination Hall, Victoria Embankment, on Feb. 28th, 1893,

BY B. A. WHITELEGGE, M.D., B.Sc. LOND.

Prevalence determined by External Conditions. — Not accompanied by Change of Type.—Milk Epidemics.—Water Epidemics.—Seasonal Prevalence.—Accumulation of Susceptible Persons.

MR. PRESIDENT AND GENTLEMEN,—Although change of type is an important factor in determining the fluctuations in prevalence of epidemic diseases, it is not the only factor. Wide diffusion may take place without increased severity, and, indeed, it is not an uncommon experience to find that sudden epidemic extension is accompanied by apparent lessening of average severity and lowering of the case mortality. This involves no real exception to the general rule that the tendency to epidemic diffusion is greatest when the intensity is at its maximum. There are obviously three principal classes of conditions upon which epidemic prevalence depends: (1) The energy of the contagium itself, its power of withstanding hostile influences and of overcoming resistance; (2) the facilities for transmission of infection to susceptible persons; (3) the susceptibility of the individuals upon whom the contagium is to be grafted. The conditions which come under the second head include the varying degrees of proximity, from the closest contact to complete isolation, atmospheric states favourable or unfavourable to diffusion, and transmission by other media, such as water or milk. These are constantly changing, and, however orderly the rise and fall of intensity may be, the prevalence will be modified

at every phase by a multitude of extraneous conditions. Without any change in the real infectiveness of a disease, an epidemic, or, at all events, prevalence, may be brought about by sudden increase in the facilities for infection of susceptible persons; or, conversely, the conditions may become unfavourable, and the prevalence thereby be lessened without any loss of intensity in the type of the few attacks which occur. Such mechanical outbursts or interruptions, due to causes which are, in a sense, accidental and usually temporary in character, have one important feature in common which presents a conveniently sharp contrast to the broader cycles determined by altered quality of the contagium. They are attended by a lowered case mortality. If during the course of an epidemic, or in an inter-epidemic interval, a sudden increase of prevalence be brought about by accidental circumstances of weather, or food infection, or the like, the proportion of fatal attacks during that exceptional prevalence will be less than in the more normal periods which precede and follow it. Such a relation is antecedently probable and is in harmony with actual statistical observations. It seems reasonable to assume that those persons who are most susceptible to attack will be most readily singled out for it; and, moreover, that amongst such persons the attacks will on the whole be more severe than amongst the less susceptible. If, therefore, a wide extension of prevalence occurs it will be mainly at the expense of persons whose susceptibility is not of the highest order and whose chance of recovery is greater for that reason. The aggregate case mortality will hence be lowered, if the energy of the contagium remains unaltered. Perhaps the converse proposition is even more self-evident. If an epidemic, instead of being widely diffused, is narrowed down to a small fraction of the population, it is probable that the few who are still subjected to attack owe their selection partly to a higher average susceptibility, and that amongst these specially susceptible persons the attacks will be more severe. In a mixed community small-pox attacks the unvaccinated in far larger proportion than the vaccinated, and with far greater case mortality. If, therefore, the disease, instead of being limited to the former class, extends in some degree to the latter, the gross case mortality will be lowered by this change, which involves an increased average resistance in the persons attacked. Another simple illustration is afforded by milk epidemics of scarlet fever, such as that which occurred at Wimbledon in 1886–87. The disease was not left to follow its usual course and pick out the more susceptible portion of the population for attack. Infection was imparted to the milk and by that means forced, as it were, upon a large number of persons selected at random. Some of them resisted attack altogether; others suffered slightly, a few more severely. There were only three fatal cases amongst 600—a case mortality of 0·5 per cent. That milk epidemics of scarlet fever are rarely severe in type was pointed out several years ago by Sir George Buchanan and Mr. Power, and the observation has been amply confirmed by later experience, although in exceptional instances (at Halifax in 1881, for example) the fatality has been high. Milk epidemics of enteric fever also seem to be attended as a rule with low average case mortality, although there are notable exceptions. It was only about ten or twelve per cent. in the Armley, Moseley, Marylebone and other well-known outbreaks, and little more than half of this at Eagley and Bolton in 1876 and at Glasgow in 1875. As regards diphtheria it is scarcely possible to fix upon a standard for comparison, but the recorded case mortality in milk diphtheria epidemics on the whole seems to be somewhat lower than that observed in diphtheria epidemics due to other causes.

The question is not always a simple one. Now that bovine scarlet fever, diphtheria and perhaps enteric fever have come to the front, we have to bear in mind the possibility of attenuation (or the reverse) of the disease by passage through the cow, as well as the suspicion that the character of the attack may be modified by the magnitude of the dose of poison. Then, again, Mr. Power has given reasons for believing that the diphtheria poison may multiply in milk if left standing for some hours, possibly increasing in virulence as well as quantity. But these elements of uncertainty leave untouched the general proposition that, if compared upon equal terms, the average case mortality is lowered by this as by other mechanical facilities for the diffusion of infection, so far as it is merely mechanical. Milk epidemics, as a rule, are of very brief duration, dying out speedily without lighting up any lasting prevalence; and from a theoretical standpoint it is to be anticipated that such would be the case. Their occurrence (unlike the beginnings of an ordinary outbreak) does not presuppose the existence of other external conditions favourable to wide extension. It seems, too, that the infectiousness of individual cases of this kind is not great.

Similar considerations apply to water epidemics. They are usually attended with low case mortality, although the uncertainty as to the dose of poison is a disturbing influence, and indeed it may be open to question whether the mildness of attack which characterises great water epidemics may not be due in part to the minuteness of the dose forced upon the persons consuming the water. When the volume of water polluted is limited, the concentration may be supposed to be excessive and the dose large. Dr. Barry has found that when enteric fever arises from pollution of a well the attacks are often severe, but that in water epidemics on a larger scale, as at Bangor and more recently in the Tees Valley, a low average case mortality has prevailed. In the Caterham epidemic of 1879, investigated by Dr. Thorne Thorne, fourteen died out of the 305 attacked, the percentage being therefore 4·6 only. At Mountain Ash in 1887 an epidemic of enteric fever occurred which Mr. Spear found to affect very unequally the persons living respectively inside and outside a certain small area supplied by a particular water main. Within this special area 179 per 1000 were attacked, outside it 6 per 1000 only. Only six per cent. of the cases were fatal.

A third and still more important kind of prevalence is that which from its constant relation to season is assumed to be connected with weather and climate. So far as scarlet fever, enteric fever and small-pox are concerned, these seasonal changes prove upon investigation to be simply changes in prevalence, without any real alteration in intensity; on the contrary, the maxima are attended with a somewhat lower case mortality than the minima. They are, in short, "superadded waves," like milk epidemics and water epidemics.

If the average seasonal curve of attacks, or even of cases admitted to hospital, be compared with the seasonal mortality curve of the same disease, it will be found that the former, whilst closely parallel with the latter, is somewhat in advance of it at every phase. The attack curve, moreover, has a wider range than the other; it rises higher and falls lower. Since the seasonal maximum of attacks does not carry with it a proportionate excess of deaths, it follows that the attacks at that phase are on the average less fatal; and, conversely, as the falling off in number of attacks at the lowest phase is not attended by a proportionate reduction in mortality, the comparatively few attacks then occurring must be somewhat more fatal in character. In the Annual Summary for 1890 the Registrar-General gives charts which illustrate these points very clearly, especially as regards enteric fever and small-pox. In making the comparison, two curves are necessary. The Registrar-General has pointed out that the mortality curve will naturally be somewhat flatter and less acute than the other, since the deaths arising out of a group of cases admitted or notified in a given week may be spread over several successive weeks, especially in diseases of long average duration. Dr. Longstaff[1] calls attention to the possibility that limits of hospital accommodation may at times of maximum prevent the admission curve from rising as high as it otherwise would. But after making due allowance for these sources of error—which tend in opposite directions so far as the present comparison is concerned—the contrast is marked. In the charts referred to, the Registrar-General compares in respect of each disease the average seasonal curve of mortality in London with that of admissions to the various isolation hospitals. The admission curve of enteric fever rises 100 per cent. above and falls 50 per cent. below the mean, while the death curve has a range little more than half of this (+50 per cent. and − 30 per cent.).[2] As regards small-pox, too, the difference is strongly marked, the admission curve reaching +70 per cent. and −60 per cent., and the death curve +30 per cent. and −40 per cent. It should be noted, however, that owing to

[1] Studies in Statistics, p. 403.

[2] In the Annual Summary for 1880 the Registrar-General states that "It appears from the records of the London Fever Hospital, 1848-57, that out of an equal number of cases of enteric fever about as many die in one quarter of the year as another, the spring quarter, however, showing a slightly greater fatality amongst its cases than any one of the other three." It is not to be anticipated that hospital cases would include a full proportion of the slighter attacks, but it seems from the above observation that even amongst those of sufficient severity to bring them into hospital there is some indication of higher case mortality at the period of spring minimum.

the periods of record being different the two curves are not altogether parallel, the winter maximum being far more marked in the death curve, based upon fifty years' statistics, than in the hospital curve, which relates only to the fifteen years 1876–90. But in an earlier chart of similar character[3] the concurrence is closer; and in both instances the contrast in range is very striking and confirms the relation between maximum seasonal prevalence and lessened average fatality of attack. We may conclude, from the difference between the two admission curves referred to, that small-pox since 1880 has somewhat altered its seasonal curve, the spring maximum having become much more prominent and the winter maximum less so. The differences between the death curve and admission curve for scarlet fever are slight, and notification statistics[4] afford a clearer contrast. Still the attacks, measured in either way, rise higher above their mean in autumn, and fall further below it in spring, than do the deaths; and the same inference of lessened case mortality in time of seasonal prevalence may be drawn. As regards measles there are few data for comparison, but Dr. Harvey Littlejohn[5] has given us the sensonal curves of deaths and notified attacks for the ten years 1880–89 in Edinburgh. They are closely parallel, and, so far as the principal maximum in spring is concerned, there is no indication of altered case mortality, the crests being of equal height; but the attack curve falls rather lower than the other at the minimum, and the smaller maximum in December is more marked in the attack curve than in the other. At all events there is no evidence of increased case mortality accompanying the seasonal prevalence. The epidemiological character of measles is such as to render it unlikely that any strong contrast would appear. The epidemics are brief and widespread and the attacks which bridge over the intervals are few. Hence the data, including the monthly means of attacks and deaths, are made up almost exclusively of the records of epidemics, the attacks and deaths during the intervals being too few to materially affect the averages or to afford a basis for comparison.

Amongst certain diseases of mobile type, and particularly those which are dependent upon changes in the soil, the seasonal curve has a different meaning. The seasonal maximum of prevalence is dependent upon increased virulence, and the severity of attack is greatest at that time. The lowered case mortality of enteric fever during the autumnal prevalence divides it sharply from the purely telluric group in this respect. Diphtheria, again, is liable to rapid change of type, and it may be that seasonal conditions bring about intensification as well as wider diffusion of the contagium. The notification figures quoted by Dr. Thorne Thorne[6] lend some support to the idea that the case mortality in diphtheria is, on the whole, increased during the autumn maximum; but further evidence is wanted. It would seem that, in small-pox at all events, the seasonal curve is of wider range during periods of greater epidemic intensity than at other times. Buchan and Mitchell[7] found that this was the case in 1870–71–72 to a very marked degree as compared with the other years for which records were available. Indeed, the figures given by them show a gradation in this respect in successive quinquennia, from the point of minimum mortality in the fifties to the great epidemic of the early seventies, a gradation which is in keeping with other indications of progressive change in the character of small-pox during that period. In the following table the range of the mean seasonal curve for each group of years is measured roughly by the percentage excess of the January maximum over the September minimum:—

Table of Small-pox Deaths in London.

During	Deaths in first four weeks of January.	Deaths in last four weeks of September.	Percentage excess of maximum over minimum.
1840–44	485	345	41
1845–49	462	288	60
1850–54	317	207	53
1855–59	263	217	21
1860–64	324	233	39
1865–69	406	228	78
1870–74	984	372	165

From this it appears that, as the destructiveness of small-pox increased in the sixties, so did the range of its average seasonal curve. If, however, the quinquennia are traced backwards from the time of least mortality in the direction of the previous great epidemic of 1838, the otherwise accordant indications are interrupted by a conspicuous lessening in intensity of the seasonal curve in the years 1840–44. Another point of some interest in connexion with the seasonal curves of infectious diseases is that they are often bolder where climatic changes are more intense and more orderly. This is seen, for example, upon comparing the curves of small-pox, measles, diphtheria, or enteric fever (not, however, of scarlet fever or whooping-cough) for London and New York respectively.[8]

The varying incidence of infectious diseases at different seasons is no doubt dependent, directly or indirectly, upon climatic conditions. It has been suggested that social relations have much to do with it, there being closer aggregation in-doors in the colder months, but this explanation is negatived by the want of uniformity amongst the diseases in question. Some infectious diseases are most prevalent at the beginning of the winter, others at the end. Scarlet fever reaches its maximum in England in October, in Germany and Scandinavia in January, in New York in May. Further than this: the rise begins long before the maximum is reached, so that if it be alleged that the commencement of winter-conditions causes the maximum of scarlet fever prevalence to be reached in October it would still be necessary to explain why the rise begins as far back as May. Perhaps the most unequivocal instances of a seasonal prevalence of disease dependent upon social conditions are those which arise from the difference in risk of exposure to infection on Sundays as compared with other days of the week. Thus the rash of small-pox has been stated to appear more often on Sunday than on any other day of the week amongst domestic servants, the usual interval between infection and rash being fourteen days and the chance of out-door infection being often limited to Sunday. The notification records at Nottingham show a very decided minimum in the number of onsets of scarlet fever on Wednesdays, corresponding, as it would seem, to a maximum risk of infection on Sundays.

THE CHOLERA EPIDEMIC IN RUSSIA.

BY FRANK CLEMOW, M.D. EDIN. &c.

No. I.

IN CENTRAL ASIA AND SIBERIA.

SINCE 1872–73 no epidemic of cholera has occurred in Russia that can compare in violence and extent with the recent outbreak. The disease still lingers in some parts of that empire, but these bear but a small proportion to those in which it is extinct, and it is now possible to gather from the completed returns some impression as to the severity of the epidemic of 1892. Daily reports have been received from every part of the country by the authorities at the Medical Department of the Ministry of the Interior in St. Petersburg, but these have in many instances been supplemented by later and fuller reports, so that the final totals are considerably greater than the sum of the daily ones would be. With regard to the authenticity of the figures given in this and the following articles, it should be stated that they have been in every case obtained directly from the authorities just named. The liability to error, particularly where the figures are derived from such distant and sparsely inhabited regions as those which form the subject of the present article, is obvious, but the Russian Government has spared no effort to obtain as complete returns as possible, and I am assured by the Director of the Medical Department that in no case does the error exceed 10 per cent. It is proposed here to trace briefly the course of the epidemic throughout the Russian empire.

The cholera reached Russia direct from Persia. It threatened her frontiers as soon as it appeared in Meshed, which is little more than 100 versts from the line which separates the two countries. As Meshed may be looked upon as the nidus from which the disease spread to Russia, it may be worth while to look a little closer at the nature of this town. Meshed

[3] Registrar-General's Annual Summary, 1880.
[4] Epidemiological Society's Transactions, 1887-88, p. 176.
[5] Ten Years' Compulsory Notification of Infectious Diseases in Edinburgh.
[6] Diphtheria: its Natural History &c., p. 32.
[7] Journal of the Scottish Meteorological Society, 1875.
[8] Buchan and Mitchell, Journal of the Scottish Meteorological Society, 1878.

is a place of considerable importance; it is the capital of Khorassan and is one of the most densely populated cities of Persia. It is joined by a good road with Askhabad, the chief town of the Russian province of Transcaspia. In Meshed are found the mosque and tomb of the holy Imam Riza, a highly venerated saint amongst the Shiite Mohammedans, and consequently there is an almost constant flow of Mussulman pilgrims visiting the shrine from various parts of the country. That they come from both sides of the frontier is proved by the fact that on the Transcaspian Railway a time-table has been published in the Persian language and bears a portrait of the Shah to induce the faithful to avail themselves of the railway in their pilgrimages. Cholera appeared in Meshed in May, 1892. A telegram in *The Times*, dated May 26th, stated that up to that date thirteen cases had been reported.[1] It may have existed there for some time before this date, as on the 31st (19th, Old Style) it had passed the frontier and appeared in Kaachka, 130 versts (eighty-seven miles) from Meshed. Kaachka was the starting-point of the epidemic in Russia, the point of inoculation whence the disease spread throughout the country. The local manifestations were not, however, very severe. From May 19th[2] to June 10th there were, in all, forty-five cases with forty-one deaths. It is not unlikely that there were more cases, but unreported, which would reduce this appalling death-rate. Kaachka is a town lying in the midst of a more or less barren steppe north of the Persian frontier. It consists of an *aoul*, or Turkoman settlement, a Russian town, and a station on the Transcaspian Railway, about 120 versts from Askhabad on the west and 200 versts from Merv on the east.

The effect which the opening of new railways or other means of communication has on the course of epidemics is an interesting problem. The present epidemic of cholera has spread through Russia with unprecedented rapidity, which may be most plausibly explained as the result of the laying down of many new railways and of the increase in the number of people who travel by rail. By far the most important of the new lines which have been opened since the epidemic of 1872-73 is the Transcaspian Railway. This line, it will be remembered, was projected in 1880 and carried out by General Annenkoff, through whose energy the last part of the line was finished in an incredibly short space of time, and the completed railway to Samarcand was triumphantly opened on the anniversary of the Czar's coronation in the spring of 1888. Originally intended as a purely military railway, and still under the control of the Ministry of War, it has proved, nevertheless, of great commercial importance, and carries large quantities of goods and passengers. It has shortened the journey between Samarcand and the Caspian Sea from the many days which were formerly needed, when camels formed the sole carrying power, to the comparatively short period of sixty hours. Beginning at Oozoon Ada on the Caspian Sea, the line runs through Askhabad, Merv and Bokhara to Samarcand, where, for the present, it ends. For the greater part of its course it runs over almost barren steppes, bordering the desert of Kara Kum, until it crosses the great Amu Daria river (the ancient Oxus) and enters the rich and fertile valley of the River Zerafshan, along which it runs to Samarcand. Kaachka is a station about 370 miles from the Caspian terminus of the railway, and for this distance the line runs to the north of, and parallel with, the Kopet Dag mountains, which here form the natural frontier of Persia.

As the soil (or, rather, variation in the moisture of the soil) has been thought to play an important part in the spread of cholera, it may be interesting to note its nature in this district. The correspondent of *The Times*, who travelled over the line immediately after its opening, writes:[3] "The best characterisation of the whole surface of the country is to divide it into sand steppes, salt steppes and grass steppes, the last-named being the so-called oases interspersed between the other two. ..... With few exceptions all the sand steppes manage to nourish the short and knotty shrub called the 'saxaul,' which strikes its hardy roots down to a wonderful depth, sometimes ten or twelve feet, into such soil as it can find, and appears on the surface like a thin and scanty gooseberry bush, varying from a foot to five feet in height, at intervals of five, ten, twenty, or perhaps forty feet, all over the plains as far as the eye can see. ..... As soon as the great heats come on, the saxaul gets scorched up and assumes a similar colour to that of the dusty drab steppes." Where there is none of this plant the sand steppes "present nothing but shifting sand, driven up by the winds into hills of all shapes and sizes, destitute of vegetation and interspersed with salt lakes and pools." The salt steppe is even flatter than the sand steppe, as it is unaffected by the wind. It is "caked over with a thick crust of whitish clay or marl, impregnated and faced with salt, which crystallises perfectly white on the surface, like snow, especially in the sunken spots or salt-pans left by the rainpools. Salt here for the most part takes the place of sand and glitters brightly in the glare of the sun." In the oases, on the other hand, which form about 10 per cent. of the whole of the country of Transcaspia, the soil is very rich and fertile. It has received in Russian the special name of "loess," or white earth, in contradistinction to the "tchernozem," or black earth, which gives the southern provinces of Russia their fertility. It is found only near the streams which water this sandy plain. In the stretch of country between Kaachka and the Caspian Sea (the highway by which cholera entered Europe this year) the watercourses are very small and few in number, thus differing from the eastern section of the railway, where the large streams of the Tedjent, the Murghab, the Amu Daria and the Zerafshan produce a fertile soil and allow of a growth of luxuriant vegetation. The small streams of the western half of the line come from underground sources at the foot of the northern slopes of the Kopet Dag mountains, where the rainfall is only about half of what it is on the southern, or Persian, slopes.

Another important feature of this district is the occurrence at times of inundations from the overflow of these usually small and insignificant streams. After severe storms they become rushing torrents and overflow the country in an extraordinarily brief space of time. In the early days of the railway these inundations were almost as great a difficulty to contend with as the shifting sands, and it not unfrequently happened that considerable stretches of the line were torn up by the violence of the floods; but the water subsides as quickly as it rises, either absorbed by the sands or evaporated by the great heat, and in a few days land that was completely under water may be seen beginning to split into cracks and fissures from the heat of the sun.

It is interesting to note the behaviour of the cholera epidemic in this salt and sandy desert. Mr. Macnamara, in his "History of Asiatic Cholera," writes: "After a careful study of the history of the disease a desert appears to me to be the only country in which cholera is unable to establish itself; the disease speedily dies away in an arid waste of this description." The epidemic of last summer lingered for some three months in the province of Transcaspia, but, with the exception of the town of Askhabad, no part of the province suffered severely from the disease. The total number of cases reported was 2800 and of deaths 1517, the ratios per 100,000 inhabitants being 400 and 217 respectively, figures in marked contrast with those furnished by the neighbouring fertile provinces of Turkestan. I proceed to trace in more detail the course of the epidemic.

As stated before, there were in Kaachka between May 19th and June 10th forty-five cases with forty-one deaths. Between June 10th and 30th there were, in addition, thirty-one cases with thirteen deaths. After the 30th Kaachka ceased to appear in the official lists, so that presumably the epidemic had ceased there. On May 25th cases occurred in Oozoon Ada, the sandy terminus of the Transcaspian Railway on the shores of the Caspian Sea, and in the next three days three Persians died of cholera. Apparently the intervening stations were not affected so early as the terminus. Whether this was the fact, or whether cases occurred which have not been officially reported, it is impossible to say. It is conceivable that the Persians contracted the disease in Kaachka and did not sicken till after their arrival in Oozoon Ada, the journey taking twenty-two hours and a half by fast train and less than thirty-six hours by slow train. The next reported cases occurred amongst a detachment of troops coming from Merv and going into camp near Askhabad. Between June 4th and 10th four men died, and on the last date there remained nine severe cases and twenty-three suffering from diarrhœa. During that time two children died from cholera in Askhabad. This town is the capital of Transcaspia; it contains a population of 10,000 and is the most important station on this section of the line. It was destined later to be the scene of a most violent outbreak of the disease, but at the beginning

[1] It is stated (Brit. Med. Jour., vol. i. 1892, p. 1153) that thirteen cases occurred in Meshed between May 10th and 14th. These dates were probably Old Style dates. The 14th, Old Style, is the 26th, New Style.

[2] Henceforth all dates mentioned are Old Style dates.

[3] Russia's Railway Advance into Central Asia, by George Dobson, p. 147. London, 1890.

the numbers were small. On June 14th and 15th there were seven cases but only one death, whilst in the neighbourhood (presumably in the camp before mentioned) there were thirteen cases with five deaths. On the 18th, cases first appeared amongst the Turkomans in the *aoul* of Askhabad and in four days there were twenty-four cases with eleven deaths. Onwards to the end of June there were, in all, fifty cases, but the number of deaths is not stated. During the first half of July the numbers remained comparatively light, but on the 23rd there was a sudden and extreme rise in the numbers of cases and deaths. At that period there was intense heat and a close and sultry atmosphere throughout the day and night, and it is not unimportant to note that there was also an unusual abundance of ripe melons, of which the Russians are at all times extremely fond. On July 23rd there were no less than 372 cases with 110 deaths; on the 24th there were 172 cases with 168 deaths; and on the 25th 117 cases with 63 deaths in a population numbering only 10,000.[4] After this date the numbers slowly diminished. I have dwelt thus in detail on the epidemic in Askhabad, partly because of the importance of the town, but chiefly from the interesting fact that the disease remained there in insignificant proportions for several weeks and only assumed a severe aspect after extremely hot and stagnant weather.

In the accompanying chart the relation of the rise in the intensity of the cholera epidemic in Askhabad to the rise in temperature is shown diagrammatically. For the daily temperatures I am indebted to the secretary of the Central Physical Observatory in St. Petersburg.

Between Askhabad and Oozoon Ada there is no town of any size save Kizil Arvat, which has never appeared separately in the lists, any cases which occurred there being included under the general heading of Transcaspian province. Oozoon Ada, important only as being the terminus on the Caspian Sea of the Central Asian Railway, was at no time severely affected, the total number of cases between May 25th and July 9th being seventy, and of deaths twenty-five. It may be mentioned in passing that the chief water-supply of this town, as also of Krasnovodsk, which lies a short distance to the north, is derived from the distillation of sea water. It need scarcely be said that in this province there is no system of drainage. Throughout the Central Asiatic provinces there exist the so-called "Persian" or "dead wells," which receive all excreta. These are deep pits or wells, often as much as eight sajenes (fifty-six feet) in depth. "Besides these deep holes human excrement in no case remains on the surface of the earth, as in accordance with the local customs it is dug into the soil as soon as possible."[5]

Having traced the disease westward to the shores of the Caspian, I may turn and briefly review its course eastward. On June 8th a conductor of one of the trains was taken

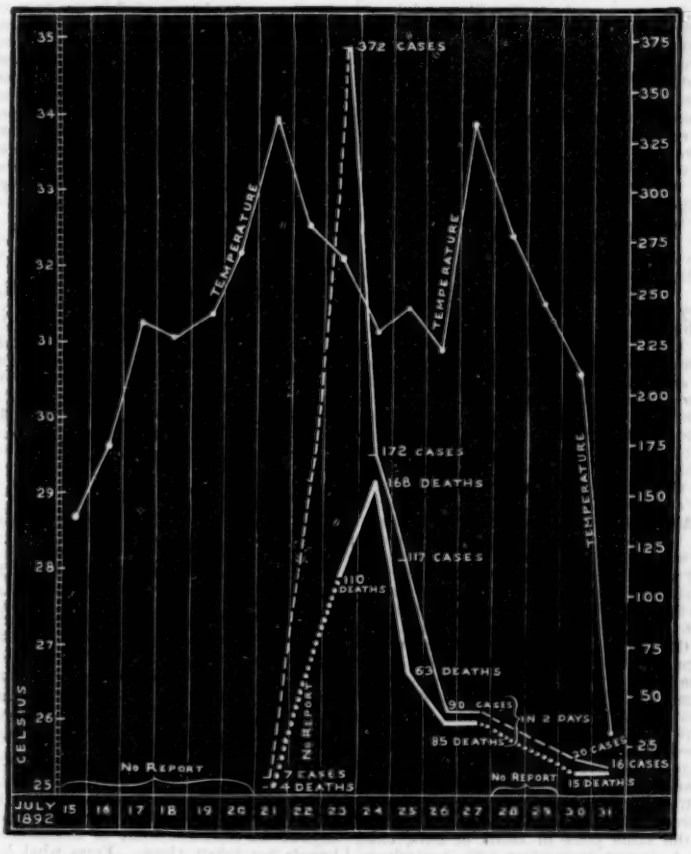


Diagram to illustrate the course of the cholera epidemic in Askhabad during the last half of July, 1892, and the temperature of the place for the same period. The average daily returns for the first half of July were six cases and three deaths. From the 15th to the 21st no returns had been received. The temperature curve has been obtained by taking the average of three daily observations.

[4] **The significance of these figures may be best appreciated by supposing that the same proportion to population had been observed in St. Petersburg. In that case we should have heard of 37,100 cases in one day, with 16,800 deaths.**

[5] **Report of the Medical Department of the Ministry of the Interior for the year 1889, St. Petersburg, 1891.**

ill on the train and removed at Bokhara Station, where he died next day; and about the same time two privates of the railway battalion of troops died at the same station. The town of Bokhara lies fifteen versts (ten miles) from the railway station, round which, however, has grown up a small Russian settlement. From the Khanate capital no official figures have been published either of cases or deaths. It is possible that there were no cases there; if this be so it is a high tribute to the radical measures of sanitation carried out last winter at the instance of M. Lessar, the Russian diplomatic resident in Bokhara. From Merv equally no official figures have appeared, though at the time of the excessive mortality in Askhabad it was stated that there was also a considerable number of cases in Merv. One of the earliest places to be affected in Russian Turkestan (generally spoken of as the Turkestan border) was Djizak, between Samarcand and Tashkent. Cases occurred there as early as May 31st, and from this date till June 20th there were in all 356 deaths from cholera. Samarcand escaped lightly; from May 31st till July 16th — when reports from there ceased — there were 148 cases with 88 deaths. This comparative immunity it probably owes—at least, in part—to its high position on the banks of the Zerafshan river. From Samarcand the infection spread eastward and reached Tchinaz on June 5th. Tchinaz is a town on the left or western bank of the Syr Daria river, and there is here a ferry which carries the traffic between Samarcand and Tashkent. In this last-named town, the capital of Russian Turkestan, the first cases were reported on June 11th. Tashkent was much more severely affected than Samarcand; from the beginning of the epidemic till Aug. 20th, when reports ceased, there were 1058 deaths from cholera.

A word as to the inhabitants of these provinces may not be out of place here. In the Report of the Medical Department of the Ministry of the Interior for 1887 (published in 1889) some interesting details are given as to the tribes in the regions of the Amu Daria. The chief tribes are the Turkomans, the Sarts, the Karakalpaks and the Uzbeks. The Turkomans live in *aouls*, in dome-shaped *kibitkas* or huts built of rushes or twigs; each *kibitka* is in the centre of a court or yard surrounded by a clay or mud wall. These courts are said by the report to be "evil-smelling, to abound in excrement and filth, as the Turkomans do not remove their refuse on to the fields; there is no vegetation in the *aouls*; water is taken from the *ariks*, or artificial irrigation channels, or from lakes; it is, of course, dirty, as the cattle drink from and bathe in it. At the end of the summer there is very little water left in either the *ariks* or lakes; the people suffer from want of water, but do not dig wells." The reason why they do not dig wells is probably to be found in the fact that water in the wells, whether deep or superficial, is always either salt from the first or very soon becomes so. The Sarts are more inclined to commerce than the Turkomans, and "always live near the towns and bazaars and adapt themselves to the local customs of the inhabitants." The Karakalpaks "live on the banks of rivers in *kibitkas* summer and winter, and are so hardy that even with 20° of frost Réaumur (– 13° F.) they do not complain of the cold or wish to change their tent life. During the time of the inundations of spring and autumn they move their tents to the highest-lying land and live as on islands, constantly occupied in catching fish, on which they live and in which they trade. In consequence of this mode of life they suffer from intermittent fever, rheumatism and leprosy." The Uzbeks, a more settled race, live constantly in the same place in *saklii* or huts, close to broad *ariks*, and occupy themselves with agriculture. "Their huts are built of clay, are six to seven arshins (fourteen to sixteen feet) in height, with an opening in the roof for escape of smoke; there is a hearth in the centre of the hut, where the fuel is the knotty saxaul wood. About the hearth are spread mats, or among the rich, carpets, and near it is a hole or ditch into which slops are thrown, and which is not unfrequently soiled by the dejecta of the children. Beds are only found among the well-to-do, and generally the Uzbeks sleep on the mats side by side, without distinction of sex. The foul smells, the flies and mosquitoes, the high temperature in summer and the cold in winter make a *saklia* not only an unpleasant but also a dangerous habitation. The excreta and refuse are heaped together round the houses, mixed with sand which contains a quantity of lime, and in the spring removed on to the fields as manure. Each *saklia* has a garden and rice plantation, which require abundant watering. The prevailing diseases among the Uzbeks are intermittent fever, trachoma, gastro-intestinal catarrh and cutaneous diseases." The occurrence of the last may not be unconnected with the personal habits of these people, who, like the Caucasian highlanders, change their linen only once a year, on the Feast of Bairam! In summer the children suffer greatly from choleraic diarrhœa and dysentery, and the mortality is very high. Very many families are the subjects of syphilis. Amongst a population of this nature it is not surprising that the epidemic of cholera was severe, as shown not only by the numbers attacked but also by the percentage of fatal cases. From the table to be given in the next article it will be seen that the proportion of cases to the population was very markedly higher in the provinces of Turkestan than in any other district in Central Asia. In Ferghana (the former Khanate of Khokand), out of every 100,000 inhabitants 2415 suffered from the disease, and in the province of Samarcand out of the same number 2138 were attacked, figures representing a sufficiently severe visitation, and only exceeded in the present year in certain districts of the Caucasus and in the government of Astrakhan. Tracing the further course of the epidemic to the more northerly districts of Central Asia and Siberia, it appears that the province of Uralsk was first affected early in July. This province lies to the north of the region between the Caspian and Aral Seas. The first cases occurred on July 8th amongst the Kirghiz inhabitants of the town of Gurief at the mouth of the Ural river. The province suffered somewhat severely, the proportion of cases and deaths per 100,000 inhabitants being 1023 and 524 respectively.

(To be concluded.)

SOME REMARKS ON

THE PATHOLOGY AND TREATMENT OF TYPHOID FEVER.

By P. W. LATHAM, M.D. CAMB., F.R.C.P. LOND.,
SENIOR PHYSICIAN TO ADDENBROOKE'S HOSPITAL, AND DOWNING PROFESSOR OF MEDICINE IN THE UNIVERSITY OF CAMBRIDGE;
AND
ARTHUR C. LATHAM, B.A.,
BALLIOL COLLEGE, OXFORD.

(Concluded from p. 466.)

PART II.

ON THE TREATMENT OF TYPHOID FEVER.

By P. W. Latham.

WE come now to consider what are the indications for treatment which result from these investigations. First, if the patient comes under observation at an early period of the disease—that is, during the first eight or ten days—obviously the points to aim at would be to eliminate as many as possible of the bacilli from the intestine, to paralyse or attenuate such as remain and to eliminate or neutralise the toxic material from the economy; if these objects can be attained the result would be either to cut short the disease or to abridge its future course and render it milder. In a great proportion of cases diarrhœa sets in early, but in some there is obstinate constipation, and the most severe cases I have seen have been those in which for two or three or four days at the commencement of the disorder no action of the bowels has taken place. From what has been previously stated this is quite intelligible. If diarrhœa exists, some portion of the toxic material generated by the bacillus is swept out of the body, together with numbers of the bacilli themselves. If, however, the bowels are confined, the whole of the toxic material is absorbed into the system, producing its deleterious effects, as shown by rapid rise of temperature &c., the bacilli themselves increasing at the same time rapidly in number. The indication, then, at this stage is to eliminate the toxic material from the intestines by acting upon the bowels and using such antiseptic remedies as will powerfully affect the bacilli.

Now amongst intestinal antiseptics calomel is probably the best. It materially retards decomposition due to low organisms and its antiseptic power is not as greatly diminished by admixture with fæcal matters as is that of other antiseptics. From its insolubility it passes into the intestines and so comes in direct contact with the parts where its action is most needed, putting a stop to the growth of the bacilli or attenuating their virulence. Here it may be remarked that it is

no new thing to advocate the use of calomel in typhoid fever. Dr. Anthony Todd Thompson used to give it; Dr. Parkes considered it was to be strongly recommended in this disorder, given not later than the tenth or eleventh day and at no time in large doses—one or two grains twice a day was enough. Wunderlich prescribed one to five grains twice daily, which Dr. Parkes considered too large a dose. Sir William Aitkin writes: "In the great majority of cases where it can be given during the first week and before the occurrence of much diarrhœa the course of the disease is rendered milder and shorter." But these high authorities gave it in order "to influence the elimination from the intestinal glands by direct local action on the intestinal membrane." The late Dr. George B. Wood of Philadelphia, in his "Practice of Medicine," bears testimony to the benefit to be derived from mercury about the seventh or ninth day of the fever, and he held that "it tends in some degree to arrest the progress of the disease in the glands of Peyer and to promote resolution of the inflamed patches." What I suggest is that it acts beneficially by attenuating or arresting the development of the typhoid and other bacilli (Bienstock's bacillus, bacterium coli commune &c.) in the intestines, and so removing the cause of the disease. The toxines of these bacilli have already been absorbed into the blood-stream; but they will soon be eliminated or possibly in some way, as yet not clearly made out, rendered innocuous if the further supply of them be cut off. By cutting short the disease I do not mean that the patient passes at once from a state of disease to that of health. That is impossible. But what I do mean is that the specific process—the development, that is, of the specific poison—is put a stop to. The swelling of the intestinal glands, the congestion of the intestinal mucous membrane, and the swelling of the mesenteric glands associated with this specific poison have taken place, and, though the specific disease is cut short, these morbid conditions, which by themselves would give rise to pyrexia, diarrhœa &c., require some days before they pass away and the parts regain their normal states. It takes some days after the disease is cut short to repair the damage done by the poison.

If, then, a patient comes under observation during the first week, and there is no diarrhœa, I would recommend the administration of five grains of calomel, the dose to be repeated the following day if not more than two copious evacuations are produced by the first dose. If there be slight diarrhœa, a quarter of a grain, or half a grain, or a grain of opium may be added—just sufficient to check excessive peristaltic action. If the opium stops this action altogether it will do harm. If diarrhœa is a marked symptom at the commencement of the disorder, or if violent meteorism, albuminuria or great anæmia exists, I should discard the calomel and use one or other of the remedies to be referred to directly. Where calomel acts beneficially the temperature is reduced, the beneficial remission is persistent, and a considerable shortening of the whole febrile period takes place. The cases in which it has seemed to me to act most satisfactorily have been those in which its administration about the sixth or seventh day has been followed by three or four copious greenish evacuations, a lowering of the evening temperature from 104° or 104·5° to 103°, and subsequently from the eleventh or twelfth day the evening temperature gradually declining until about the nineteenth or twentieth day it reaches a normal point. Liebermeister gave three or four ten-grain doses in the early stages of the disease, and was satisfied that he caused the attack to abort in a number of cases. I have never given such large doses. Further experience, however, may show their utility and indicate the conditions in which they may be safely employed. Still, it appears to me that when by the sixth or seventh day the evening temperature has reached 104° or 105° the damage done is so great that, though the typhoid bacilli are destroyed and the specific disease is cut short, yet, for the reasons I have already given, the patient's evening temperature will not reach the normal point earlier than the nineteenth or twentieth day. After giving one or two five-grain doses of calomel, the remedy may be given on subsequent days in smaller quantities, one or two grains once or twice a day in combination with opium and ipecacuanha, endeavouring to adjust the quantity of opium so that there should be one, two and certainly not more than three evacuations daily, and suspending the use of the opium at once if it paralyses the peristaltic movement of the bowels and leads to increased tympanites. Or the following may be employed: from three to five grains of mercury with chalk, two grains of compound ipecacuanha powder, with a sufficient quantity of confection of roses as pills, or three grains of blue pill may be substituted for the grey powder.

With regard to the effects of mercury in the treatment of continued fever, it must be borne in mind that in this disorder the gums do not readily take on the mercurial action. This specific action must, however, be carefully looked for, and when symptoms of mercurialism appear the remedy must be suspended or given at longer intervals. As soon also as the evening temperature of the patient shows continuous daily remissions I should suspend the remedy or lessen the dose, according to circumstances. Upwards of fifty years ago Dr. Peter Mere Latham compared the mercurial treatment with different modes of practice in different cases of the same epidemic. "Finding one season that his wards were full of fever, whilst yet its type was so mild that scarcely any died, he thought this a favourable opportunity for trying whether mercury had any beneficial operation upon the disease. Accordingly, he treated half his cases with small doses of mercury with chalk and the other half with the liquor ammoniæ acetatis and so forth, and no mercury, and he found that the patients in the first of these classes were on the average, convalescent sooner than those in the last."

Ipecacuanha is a very useful addition to the mercury, as in small doses it retards the peristaltic action of the intestines and lessens the secretion from the mucous membrane. It may do more than this: the beneficial action of large doses in dysentery is very striking and has not as yet been explained. I am not at present prepared to express an opinion upon what was once the favourite practice with physicians, of giving an emetic of ipecacuanha at the onset of a fever. The mode of action of this drug in large doses, independently of its emetic action, requires further investigation. Sir Thomas Watson, in discussing the treatment of fever, says: "Perhaps emetics may, in the present day, be too much neglected. I have no notion of their stopping the fever; but when given early, especially if gastric disturbance be a prominent symptom, they are sometimes followed by a marked abatement of many morbid sensations. 'It is astonishing,' says the observant Sydenham, 'how it happens that a vomit which does not produce either a large or a morbid discharge from the stomach should so materially relieve the nausea, restlessness, anxiety and furred tongue of the patient.'"

After the end of the second week of the disease constipation is to be carefully guarded against. The late Dr. Todd wrote: "Restrain diarrhœa and hæmorrhage in typhoid fever, and when you have fairly locked up the bowels keep them so ..... for four or six days or even longer." To carry out the latter suggestion is, I think, most prejudicial—and for two reasons. In the first place there is allowed a greater absorption of the toxines from the alimentary canal and it will generally be found that with constipation the temperature of the patient rises; in the second place, by allowing an accumulation of fæces, especially in the lower part of the ileum, the risk of perforation taking place is very materially increased; the intestine is put on the stretch, and if there be a deep ulcer the peritoneal covering may give way. In some animals, it will be recollected, it was only after the intestinal peristaltic action had been stopped that Seitz succeeded in producing typhoid fever. I think it best where there is a tendency to constipation to secure at least one daily evacuation, and, if by means of small doses of calomel or grey powder this is not effected, then to administer daily an enema of about half a pint of soap-and-water.

If there be too copious or excessive diarrhœa this must be restrained, and the best remedies are the subnitrate of bismuth and tannic acid. The subnitrate of bismuth acts beneficially in two ways: first of all it is a good antiseptic when brought in contact with the surface of substances, as is seen by its preventing any offensive discharge when sprinkled over fresh wounds.[1] Owing to its insolubility it exerts little antiseptic effect when added to liquids. Its antiseptic effect may be due in some measure to its slowly giving off nitric acid, which is an energetic bactericide; but it possesses also another special action in intestinal mischief. It was found by Gosselin and Heret,[2] from experiments made on rabbits, that the action of sulphuretted hydrogen in the intestines gives rise to violent peristalsis. If, then, this gas, as the result of the putrefactive changes, is present in excessive quantity in the intestines, on administering a salt of bismuth the gas is readily absorbed by its forming sulphide of bismuth, and so

[1] See Kocher, Volkmann's Klinische Vorträge, No. 224.
[2] Centralblatt für die Medicinische Wissenschaft, 1880, p. 374.

the increased peristalsis subsides. The subnitrate when pure has no irritant property and can be administered internally in very large quantities without injury, though when applied in large quantities to external wounds so much may be absorbed as to cause poisoning, characterised by acute stomatitis, followed by intestinal catarrh &c. The liquor bismuthi et ammoniæ citras is also undoubtedly capable of acting as a violent gastro-intestinal irritant. In typhoid fever, therefore, the insoluble subnitrate alone should be used in doses of fifteen, twenty or thirty grains three or four times a day or oftener, according to circumstances. In tuberculous diarrhœa much larger doses are often given with the happiest results. Monneret gave as much in these cases as an ounce during the day. He says: "In the last seven years during which I have administered the medicine in tuberculous diarrhœa, I have seen many persons who appeared to have but a few days to live cured of their diarrhœa, so far as to be able to take food, gain flesh and strength and leave the hospital under an impression that they were cured."[3] In the diarrhœa of children who are being weaned or are fed artificially this remedy acts very satisfactorily, and the explanation of its action in all these cases must be sought for in its bactericidal properties.

As stated in the first part of this paper, the addition of subnitrate of bismuth to various media seems not to stop the growth of the typhoid bacillus. It grows in them just as readily as in media to which 0·25 per cent. of carbolic acid has been added. It may be that the bismuth diminishes the virulence of the bacterium coli commune, the products of which, as has been already pointed out, may prepare the soil for the typhoid bacillus. This is a point on which further investigations are necessary and will be made. Of course it is very necessary in giving the remedy in large doses, especially in typhoid fever, to be quite certain that it contains no arsenic, an impurity which unfortunately exists in many specimens. Reinsch's test furnishes a rapid means for doing this.

In tannic acid also we have a useful remedy in the diarrhœa of typhoid fever. It has no effect on the peristaltic movement of the bowels, but it diminishes the secretion from the glands, renders the fæces more consistent and in large doses destroys the peculiar fæcal odour. It possesses bactericidal properties and so checks putrefaction and removes unpleasant odours, but it is inferior in these respects to other agents, as strong solutions are necessary for the purpose. It may be given (best as pills) in doses of from three to five grains twice or three times a day—alternately, if necessary, with the subnitrate of bismuth, if there be excessive diarrhœa and tympanites. Where the latter is a prominent symptom at the end of the second or beginning of the third week of the disorder the use of oil of turpentine is sometimes very serviceable. Not only does it lessen secretion from mucous membranes,[4] but it puts a stop to putrefactive and fermentative processes. This may be due to the turpentine ($C_{10}H_{16}$) itself, but the bactericidal properties are intensified by the peroxide of hydrogen and the ozone, which the oil, after exposure to air and light, is found to contain. The late Dr. George B. Wood of Philadelphia, Dr. Graves and Dr. Murchison have recommended this remedy. Dr. H. C. Wood says: "There are two conditions or stages in which it is especially useful—indeed, is of incalculable service. About the end of the second week the tongue sometimes becomes very dry, red, chapped, perhaps coated in the centre with a brownish fur, and at the same time marked meteorism develops. Ten drops of turpentine every two hours during the day and every three hours during the night will in the majority of cases relieve the bad symptoms noted. ..... When convalescence is protracted, when there is a constant tendency to the recurrence of diarrhœa—when, in other words, the ulcers of Peyer's patches are slow to heal—turpentine acts almost as a specific."[5] If albuminuria exists, however, the use of turpentine is contraindicated. Turpentine is also a most valuable remedy in intestinal hæmorrhage. John Hunter was one of the first to recommend its use. He says: "I have seen it immediately stop vomiting of blood from the stomach when all other means had failed..... it is the best if not the only styptic."

Another remedy which may be used with advantage in the second and later weeks of typhoid fever is β-naphthol. It is one of the most powerful antiseptic agents, possessing three times the strength of carbolic acid or iodoform and four times that of creosote, and, being almost insoluble, is one of the best agents for disinfection of the intestines. When administered in typhoid fever it deodorises the stools, lessens the tympanites and renders the tongue moist. It may be given in doses of from three to five grains every two, four or six hours, according to circumstance. If there be profuse diarrhœa it may be given alternately with subnitrate of bismuth.

Solution of chlorine is said to act beneficially when administered in this disorder, and its use has recently been strongly recommended by Boyd.[6] Sir Thomas Watson says: "For some time past I have been in the habit of giving to all my fever patients a drachm of the chlorate of potass dissolved in a pint of water as a daily drink. Without being able to tell you precisely in what respect, in what degree, or in what way this salt appears to do good, my own impression is strong that it does exercise some favourable influence upon the general character and course of the disorder." I suggest that the beneficial effect is due to the decomposition of the salt, chlorine and peroxide of chlorine being liberated; and to promote this decomposition I recommend the addition of one drachm of dilute hydrochloric acid to be added to the solution.[7] This remedy may be used alone or in conjunction with small doses of calomel, but not with any of the other remedies referred to in this paper.

As regards antipyretics, such as phenacetin, antipyrin &c., my experience does not allow me to place much reliance upon their use. Occasionally a single dose or two have appeared to act beneficially, but in most cases the reduction of temperature has soon been followed by a rise to a higher point than before. In fact, the remedy seems to be directed only against one particular symptom, and though the body heat is temporarily reduced the typhoid poison, toxine or what not, which causes this symptom is, all the while, accumulating in the blood, and produces its full effect in spite of the remedy. The hyperpyrexia must, however, be controlled, and cold sponging and the cold bath are, in my opinion, the most reliable means for doing so. Possibly during the reduction of the temperature some portion of the typhoid poison may be eliminated through the kidneys or the skin and the condition of the patient improved. It seems to me that what we are most in want of just now is a remedy which will either promote the elimination of the typhoid poison from the blood through the usual channels or act as an antidote when injected into the blood. Possibly the serum of immune animals may be shown to have those effects; at all events, the results of experiments made in this direction, alike with regard to typhoid fever, to diphtheria and to tetanus, would lead us to hope that most important therapeutic agents are about to be brought into service for the treatment of these disorders.

Lastly, a few words as to diet and stimulants. In my opinion the best food of all in typhoid fever is milk diluted with water, the dilution being carried only so far that no curd or undigested milk is to be seen in the evacuations. Five ounces of milk with one or two of water may be given every two hours. To feed a patient oftener, unless there are special circumstances, is injudicious. A larger quantity of milk may be given if the patient seems to require it and if he can digest it. If necessary, the milk may be peptonised; perhaps in the later stages of the disease this may be called for, but in the earlier stages it is generally unnecessary. Soups and beef-tea are frequently given; but they are much less nutritious than milk, and not unfrequently they tend to increase the diarrhœa. Now, though the typhoid bacillus can be cultivated in milk,[8] other intestinal bacilli do not appear to thrive upon it; and in individuals fed exclusively on milk—children, for instance, at the breast—the fæces contain only the bacterium coli commune. Bienstock's bacillus, the bacillus putrificus coli, appears only when other kinds of animal diet are taken. A milk diet also, as it produces no irritating effects on the intestinal tract, may contribute less towards increasing the virulence of the bacterium coli commune than animal soups &c., and perhaps herein lies the explanation of why the latter may be provocative of diarrhœa. This, also, may perhaps explain the reason why relapses are so readily brought about in cases of typhoid fever by the too early administration of solid or semi-solid animal food. Imperfectly digested, it may irritate the alimentary canal, and either the altered secretions or the undigested food itself may furnish material for increasing the virulence of the bacterium coli

[3] Bulletin de Thérapeutique, vol. iv., p. 267.

[4] Rosenbach: Festschrift der Medicinischen Facultät zu Würzburg, 1882, p. 42.

[5] H. C. Wood's Therapeutics, p. 734, 1888.

[6] THE LANCET, March 26th 1892.

[7] The decomposition is as follows: $4\,KClO_3 + 12\,HCl = 4\,KCl + 6\,H_2O + 3\,ClO_2 + Cl_2$.

[8] Wolfhügel and Riedel, loc. cit.

commune, the toxines of which then prepare the soil for reviving the attenuated and enfeebled typhoid bacilli, which are even at this time still tenanting the intestinal glands.[9] As regards the administration of alcohol in typhoid fever, it is unquestionable that many cases do extremely well without its aid, and unless its use is clearly indicated patients are better without it. Alcohol is clearly indicated when there is prostration, with a feeble and soft pulse, the extremities cold, the tongue dry and brown, if there be stupor or low delirium, and especially if the impulse of the heart's apex is diminished and the first sound of the heart is feeble. Then a small dose of wine or spirit should be administered, the result watched, and the dose increased, diminished or discontinued according to its effect. Long ago the following rules were laid down by Dr. Armstrong, and endorsed by Dr. Graves, as to the propriety of persevering in the administering of wine in fever, and no better ones can be framed: "1. If the tongue becomes more dry and brown it does harm; if it becomes moist it does good. 2. If the pulse become quicker it does harm, if it be rendered slower it does good. 3. If the skin become hot and parched it does harm, if it become more comfortably moist it does good. 4. If the breathing become more hurried it does harm, if it become more deep and slow it does good. 5. If the patient become more and more restless it does harm, if he become more and more tranquil it does good."

Such, then, are some of the remedies that appear to be useful in the treatment of typhoid fever. They are nearly all old remedies—empirical—their use suggested by the keen clinical observation and experience of the physicians of a bygone age. The scientific investigations of the present day are now teaching us how to employ these same remedies with greater precision.

Trumpington-street, Cambridge

THE PHYSIOLOGY OF DEATH FROM TRAUMATIC FEVER.

A STUDY IN ABDOMINAL SURGERY.

BY JOHN D. MALCOLM, M.B., C.M., F.R.C.S. EDIN.,
SURGEON TO THE SAMARITAN FREE HOSPITAL.

(*Concluded from page 462.*)

The effect of the contraction of the vessels on the blood.—The effect on the blood itself of the existence of the febrile condition is great, and certain experimental and clinical facts are of importance as aids to our comprehension of the results produced. Constant interchanges go on between the fluids in the tissues and those in the bloodvessels, and also between the former and the contents of the lymphatics, whilst the lymphatic system also communicates directly with the venous system. When a shrinkage of the vascular capacity occurs, there must necessarily be a diminution of the amount of blood in the vessels, and the fluids of the body must therefore accumulate in increasing quantities in the tissues and lymphatics. Hence, when the arteries contract in inflammation, in the absence of venous congestion, there must be much tension induced within the tissues throughout the body. In a favourable case this tension is physiologically relieved by the action of the excretory glands and especially of the sweat glands. It is to be noted that an extreme contraction of the arteries, or even the shutting off of the blood-supply altogether, will not prevent the action of these latter glands.[1] Sweating indirectly removes much of the blood plasma. There is no evidence, however, that the blood-corpuscles are carried off in this way. If only the plasma were got rid of, a very great increase of the number of red blood corpuscles relatively to the liquor sanguinis would result. This, however, is not found to be the case. Dr. Lockhart Gibson has recorded that "the white corpuscles always rise in number and the red corpuscles always fall in number for a day or two after operations, and that without any regular proportion to the amount of blood lost."[2] The red blood corpuscles must therefore be eliminated in some way. In health these corpuscles are continually being broken up and are as steadily being formed; but the rate of formation and destruction varies. The changes are greater in youth than in old age and are very active after food has been taken.[3] During the febrile process also there is evidence that the red blood corpuscles are destroyed in great numbers. The amount of this destruction at any time may be estimated by the amount of bile pigments formed.[4] That there is not usually any very obvious sign of an excess of bile formation in an ordinary case of traumatic fever is no proof that such does not take place. "Normally a great part of the bile goes round in a circle from the liver into the duodenum, thence into the blood, so to the liver again, whilst another part is carried down by the contents of the intestine, and after becoming more or less altered passes out of the body with the fæces."[5] There are therefore no clinical means of measuring the bile formation, although bile sometimes passes in the stools in obviously excessive quantity during a fever. There can be no doubt, however, that an increased formation of bile or of certain constituents of it does occur during the febrile state. It has been shown that the formation of bile and of urea depends in large measure on the destruction of red blood-corpuscles, and that these excretions are therefore necessarily increased or diminished together.[6] In fever the urea excretion is greatly increased, and the urine pigment derived from the hæmoglobin may be augmented twenty times.[7] There is therefore distinct evidence of increased destruction of blood corpuscles during the febrile process. Again, in cases of obstruction of the intestine or of pseudo-ileus after laparotomy, along with the increasing contraction of bloodvessels, there is marked evidence of great destruction of blood-corpuscles before the secondary rise of temperature takes place. There is very evident diminution in the amount of excretion by the kidneys, amounting to complete suppression before death; but there is invariably a great and increasing quantity of indican in the urine which may be observed before any signs of suppression are detected. The amount of pigment vomited is also very great, whilst after death the liver is dark-coloured and the gall-bladder is distended with black bile. This altered bile is certainly produced in very large quantity, and it must be concluded that there is a correspondingly great destruction of red blood-corpuscles. It is further to be borne in mind that this excessive destruction of blood-corpuscles is, in these cases of pseudo-ileus, contemporaneous with the contraction of the arteries and not with an increase of temperature. On the contrary, the temperature, sometimes at least, is falling when the vomiting of altered bile is becoming excessive. In shock nothing is known, so far as I am aware, of any effects of the condition on the amount of bile and urea excreted; but convalescence from shock is often preceded by bilious vomiting, which may be due to increased secretion of bile and other fluids. With the certainty that the blood plasma is diminished, there is thus a considerable amount of evidence that the red corpuscles are also destroyed and excreted in conditions in which great contraction of the arteries occurs. According to Dr. William Hunter we should expect to find the plasma and corpuscles of the blood thus removed, if at all, in their normal proportions. He has shown that the most remarkable feature presented by the blood is the "power it possesses of maintaining a composition as rightly entitled to be termed stable as that of any other tissue of the body."[8] During health the destruction of blood-corpuscles is accompanied by a corresponding amount of blood formation, so that the blood remains nearly or quite constant in quality and quantity. Hence increased formation of blood would seem to be a physiological consequence of excessive destruction of it. But, whilst the capacity of the vascular system remains small or is being reduced, increased blood formation can only lead to still greater blood destruction. The formation of such a complex entity as a blood corpuscle must, however, make great demands on the supplies of nutriment, and therefore any great increase in the activity of blood formation is quite sufficient to account for the extreme wasting of the fatty tissues and skeletal muscles which undoubtedly takes place during fever.

The temperature in traumatic fever.—I now turn to the consideration of the temperature in fever. There cannot be any doubt that the contraction of the arteries to which I have endea-

[9] Vide ante, Sanarelli.
[1] Landois and Stirling, fourth edition, p. 556.
[2] Journal of Anatomy and Physiology, vol. xx., p. 133.
[3] Wm. Hunter: Brit. Med. Jour., Aug. 3rd, 1889, p. 239.
[4] Wm. Hunter, loc. cit.
[5] Lauder Brunton: Disorders of Digestion, p. 185.
[6] Noel Paton: Journal of Anatomy and Physiology, vol. xx., p. 521.
[7] Landois and Stirling, fourth edition, p. 413.
[8] Arris and Gale Lectures, 1889; Brit. Med. Jour., vol. ii. 1889, p. 116.

voured to trace so many of the symptoms which are observed in fever may exist in a very marked degree without any elevation of temperature being found. Moreover, great disintegration of the blood may occur when the temperature is falling. It has also been pointed out by Burdon Sanderson that "the febrile augmentation of the urea discharge takes place immediately after subcutaneous injection of pus—i.e., at a time which precedes the elevation of temperature."[9] It is therefore certain that an excessive destruction of red corpuscles may take place when there is no elevation of temperature, and consequently that the elevation of temperature in traumatic fever does not depend on the increased destruction of blood-corpuscles. In seeking for the cause of the elevation of temperature in fever, whilst attributing the excess of excretion of bile, urea and the like products to the unusually active destruction of blood corpuscles necessitated by the advancing contraction of the arteries, it might be suggested that the rise of temperature is coincident with, and caused by, the compensatory increase of blood formation. But "the urea discharge remains[10] excessive during the whole course of the fever." Therefore an excessive destruction of blood must go on also during the whole process. The patient, however, towards the end of an uncomplicated traumatic fever is evidently gaining strength and blood. At this time, not only must the blood be formed to replace that which is being destroyed, but, as the vessels relax, the increasing intra-vascular space must also be filled up. Hence increased blood formation must continue, if indeed it does not become more active, as resolution progresses. The temperature is, however, falling during this time and therefore increased blood formation cannot be the cause of its elevation. Nevertheless, the formation of blood-corpuscles in unusual numbers must involve a large amount of tissue change in many parts of the organism. Calorimetric experimental evidence shows that whilst these processes of excessive blood formation and blood destruction and the wasting of the tissues and their subsequent return to the normal are going on there is an increased elimination of heat. The variations in the amount of heat production and heat elimination which take place in health are very great. The taking of food and starvation, active exercise and repose, the temperature of the surroundings and other conditions have a marked effect on the amount of heat developed and eliminated. In health these conditions have little or no influence on the body temperature. Elevation of temperature, therefore, does not depend on increased production of heat. In fact, less heat is produced in fever on fever diet than in health on full diet.[11] It has been shown that an elevation of temperature may be brought about by a stimulation of a portion of the brain substance to the "mesial side of the corpus striatum near the nodus cursorius of Nothnagel."[12] The conclusion has been drawn that by the stimulation of a particular nerve area in the situation named "the thermogenetic function of the muscles is abnormally increased."[13] But, if an elevation of body temperature does not depend on an increased production of heat, then no such simple explanation of the thermogenetic, or rather heat-raising, effect thus produced is satisfactory. A more rational view of the thermal phenomena of fever is that elevation of temperature depends in no way on increased production of heat, but on something which disturbs the arrangement whereby heat production is counterbalanced by heat elimination. This undoubtedly sometimes occurs, and there can be little doubt that the mere stimulation of a thermogenetic tract will not cause a rise of body temperature so long as the rest of the heat-regulating mechanism remains intact. With this mechanism in a healthy condition an extra development of heat would at once produce compensating thermolysis, as when food is taken and after violent exercise; therefore thermolysis must be interfered with at the same time that thermogenesis is stimulated, or the temperature will not rise.

Every assumption that the muscles are in a special manner the heat-producing tissues, that they have a thermogenetic function peculiar to themselves, and that on the excessive exercise of this function the febrile condition depends, seems to me open to objection. Doubtless the changes which take place in fever, and which lead to marked wasting of the muscles, are associated with the development of heat in the muscles and are not dependent on, nor associated with, the exercise of the contractile function of their tissue. I have, however, shown that there is some reason to suppose that the wasting of the muscular and fatty tissues during the febrile process may be secondary to the efforts made by the organism to supply fresh blood in place of that which is destroyed. It might be argued from this that the blood-forming organs have the greatest claim to be described as specially fever-producing. We have, however, seen that the blood-forming function is also very active when fever is abating. A special claim to the title of thermogenetic cannot be established for any tissue. Probably all the tissues are thermogenetic in proportion to their bulk and vascularity. An explanation, which I believe to be new, of the rise of temperature in traumatic fever has suggested itself to me. It has been shown, as already pointed out in this paper, that whilst the inflammatory process exists there is in the affected part a temporary partial devitalisation of tissue which is the primary lesion of inflammatory congestion.[14] There is also evidence that during the advance of an inflammation an increasing area is subjected to this condition of diminished vital activity. I have endeavoured to show that this local condition, although the parts are full of more or less stagnant blood and are surrounded by a very active circulation, may transmit to the vaso-motor centre an indication that there is a want of fresh blood in the part. Exactly in the same way, it seems to me that, although the parts are surrounded by an active circulation of blood which is above the normal body temperature, and though they are themselves actually above that temperature, yet, in the process of dying or becoming partially devitalised, as the normal local chemical reactions cease, the nerves of the affected tissues must transmit to the central nervous system an indication of increasing physiological inactivity—of the approach of the coldness of death This would be expected reflexly to stimulate heat production; but if the body temperature be raised those tissues which eliminate heat—notably the skin—will be excited to increased action. Thus the local condition tends to raise the temperature whilst the heat-regulating mechanism endeavours to bring it down to the normal, and on the comparative power of these opposing forces depends the result at any particular moment. It is to be noted that, though I have attributed the changes in the pulse and in the temperature to separate physiological mechanisms, they are traced to the same cause—the partial devitalisation of the inflamed tissue; hence, in the condition of simple fever the pulse and temperature rise and fall together, but this correlation may be altered by various complications.

The specific fevers.—The foregoing conclusions apply to the simplest forms of fever only. It seems to me, however, that in every fever all the conditions which I have described may be detected. In the specific fevers and in the septic fevers there is evidence that some processes are taking place besides and beyond those which constitute a simple fever arising from an injury. The superadded causal condition is a specific poison giving rise to the pathognomonic signs of the particular disease produced. Of the fevers thus brought about the septic varieties are specially deserving the attention of the surgeon. By septic fever and by septicæmia I mean a complication of traumatic fever due to the absorption of a poison through a wound. The admission of a poison through a mucous membrane, as described by Olshausen and Verchère, has been regarded by some as a mode of development of septicæmia. I have endeavoured to show that in the case instanced death is due to other causes. Cases may occur, however, in which a poison which requires no wound for its entrance gains access to the tissues of a patient who has been operated on. It is believed, for instance, that operation cases and recently delivered women are specially susceptible to the poison of scarlet fever. All such cases should, if possible, be clearly separated from those of surgical septicæmia. Such an essential difference in etiology forbids that they should be classed together. The clinical symptoms and post-mortem signs of a septicæmia are those of a universal irritation added to those of a traumatic fever. Except in cases of septic intoxication, micro-organisms have been found in all the tissues of the body, but of all the organs the kidneys are most constantly affected in this way,[15] and clinical evidence is very strong that through the renal tissue the elimination of the poison is mainly effected. In all forms of the disease if, and so

[9] On the Process of Fever: Practitioner, April, 1876.
[10] Burdon Sanderson, loc. cit., quoting Senator: Untersuchungen über den Fieberhaften Process und seine Behandlung.
[11] Wood on Fever, p. 234.
[12] Macalister: Gulstonian Lecture. Brit. Med. Jour., vol. i. 1887, p. 770.
[13] Loc. cit.
[14] Lister Philosophical Transactions, vol. clxviii., p. 698.
[15] Pathological Transactions, vol. xxx., p. 13.

long as, the kidneys continue to act there is a possibility, even a probability, that the patient may recover; but if albuminuria and suppression of urine occur, and are at all continuous, death will speedily follow. We cannot, however, attribute death from septicæmia with suppression of urine after an operation to retention of physiological effete matter which ought to be excreted. As I pointed out in regard to obstruction of the bowels after an operation, so in this case death is too rapid to be due to the complication alone. Septicæmic suppression of urine rarely lasts more than three days, whereas in simple obstructive suppression of urine life is usually prolonged for from nine to eleven days.[16] Septicæmic suppression of urine leads, however, to great interference with the circulation of the blood through the kidneys, and thence arises a physiological condition in every respect parallel to that which exists when the blood-flow through the mesenteric vessels is interfered with by intestinal distension in cases of obstruction or paralysis of the bowel after laparotomy. It seems to me that death is induced in exactly the same way in both these conditions. There are, therefore, many resemblances between the two classes of cases, but the only common cause of the exacerbation of the inflammatory fever in septicæmia and in pseudo-ileus is the obstruction to the flow of blood through a large and important vascular area. So like, however, are the two modes of death that Olshausen and Verchère, though recognising that there is a difference, have attributed the symptoms of pseudo-ileus to a species of septicæmia peculiar to itself. It may be stated generally that any complication which raises the blood pressure during a traumatic fever is dangerous, and if persistent may induce death in the manner which I have described. Those who do not attribute the changes caused by even the simplest fever to peripheral irritation assert that the phenomena observed are always due to the formation of some poisonous substance, which, circulating in the system, induces the febrile condition. If it be assumed that peripheral irritation is not the cause of fever, both the hypothetical substance which produces this disturbance and its mode of action have yet to be discovered. On the other hand, the views of traumatic fever which I have endeavoured to formulate explain also how certain irritant poisons may cause all the characteristic phenomena of the febrile state. Circulating in the system, these poisons must give rise to a widespread irritation and consequent partial devitalisation of tissue. Such a widespread partial devitalisation of tissue must produce the same effects on the vascular and thermal systems as are brought about by the more obvious devitalisation due to a local irritation. The effect may be slight or so severe as rapidly to induce great contraction of the vessels, a high temperature and death. It is even conceivable that death may be produced almost with the suddenness of shock. In accordance with this we know that in scarlet fever, for example, a fatal result is sometimes brought about before any pathognomonic signs of the disease show themselves. Cholera and certain snake poisons may also kill with extreme rapidity. The peculiarities of the poison, of the individual and of the tissues fully account for the conditions found in the special diseases produced. In every febrile disease there is evidence of peripheral mischief. Sapræmia, septicæmia, pyæmia and all the exanthemata show signs of a widespread irritation with a tendency to inflammation in certain tissues and organs.

Portman-street, W.

A CASE OF REMOVAL OF A PORTION OF THE SIGMOID FLEXURE.

BY FREDERICK TREVES, F.R.C.S. ENG.,
SURGEON TO THE LONDON HOSPITAL.

WITHIN the last few years surgical literature has become very exuberant in matters relating to the excision of intestine and the union of divided bowel. The long list of "intestinal sutures" has been considerably extended. To many of simple mind it would appear that if two segments of bowel have to be sewn together there is little needed but a suitable needle and cotton and some elementary knowledge of sewing. At the present time, however, this plausible view meets with rebuke, and it is sought to be shown that the union of bowel involves an intricate elaboration of sewing which is far beyond the well practised art of the seamstress. In what may be termed the complexity of minor invention the intestinal suture can now take its place with the pessary and the obstetric forceps. To those to whom even Box's modification of Cox's suture would not appeal there are offered a number of mechanical adjuncts to the process of suturing which are brought forward by clamorous advocates. These include bone plates, gut plates, gut rings, tubes, intestinal bobbins, intestinal buttons and the like. Amongst these appliances Senn's original bone plate is as a Triton amongst minnows. Dr. Senn's invention opened up a new, ingenious and possibly valuable departure in abdominal surgery. Of the many imitations which have followed in its wake the majority are unimportant. Of the value of the bone plate it would be, I imagine, as yet premature to speak. The intestinal clamp, after a brief existence, has passed into the background. It was an instrument for which there was no need. For one of the earliest forms of the clamp I was myself responsible, and although many varieties of the instrument have been invented since that effort I am satisfied to think that my apparatus still remains by far the worst.

I have ventured to publish the following case in order to show that simple measures in uniting bowel may possibly be attended by success and that the older method of operating, so severely condemned by the advocates of the newest gut plate or bobbin, is not of necessity followed by the death of the patient.

A married woman aged forty-four was sent to the London Hospital on Nov. 27th, 1891, by Mr. Holroyde of Chatham. She had had excellent health until the previous June, when she had an attack of intestinal obstruction. This followed the eating of a considerable quantity of maize and was marked by colic, vomiting, constipation and distension of the abdomen. The patient was well again in fourteen days. A second but milder attack followed in August, 1892, and a third and much severer one in September. Between the attacks the bowels had responded readily to enemata and aperients. The symptoms of obstruction had passed away before the patient came to the hospital. On admission she was noted to be of healthy appearance and to be well nourished. The abdomen was soft, pendulous and distended. A very considerable quantity of fæcal matter was evidently lodged in the colon. There was no ascites; no tumour could be detected; a few coils of bowel became occasionally visible; there was no vomiting, and rectal and vaginal examination revealed nothing worthy of note. The treatment consisted of rest, daily massage of the abdomen, the daily use of enemata and aperients and the observance of a carefully selected diet. By these means the abdomen soon regained its normal size, an enormous quantity of fæcal matter was evacuated, the appetite was restored and the patient left the hospital in sixteen days (i.e., on Dec. 13th) expressing herself as feeling quite well. The diagnosis which I caused to be entered in the notes was "stricture of the large intestine either in the descending colon or sigmoid flexure." No idea of operative interference at this stage was entertained by the patient. The absence of any of the usual causes of a simple stricture of the bowel led me to suppose that the stricture was due to epithelioma. Nothing more was seen or heard of the patient—who had moved from Mr. Holroyde's district—until Nov. 15th, 1892, when she again entered the hospital. During the year which had elapsed the phenomena of the previous six months had been repeated and intensified. There had been increasing constipation, a more constant use of aperients and more frequent and more severe obstructive attacks. Vomiting was common, the appetite was poor, the patient was haggard and anæmic, had wasted considerably and had become very weak. The abdomen was now greatly distended with ascitic fluid and measured forty-two inches at the level of the umbilicus. Much pain was complained of, and vomiting was frequent and troublesome. Aperients merely added to the patient's distress, and enemata produced very little effect upon the now evidently much distended intestine. Rest and opium gave the patient relief and served to prepare her for the operation, which was carried out on Nov. 26th. There was at no time any albumen in the urine. The abdomen was opened through a median incision three inches in length. The ascitic fluid which escaped filled one full-sized bucket. An annular epitheliomatous growth was found on the summit of the

[16] Sir Wm. Roberts: Urinary and Renal Diseases, p. 27.

sigmoid flexure. It presented the usual simple ring, had formed no adhesions to adjacent parts and had not extended beyond the bowel. The abdomen having been freed of all ascitic fluid, the affected loop of bowel was drawn out of the wound and numerous sponges were wedged around it so as to make the operation in every respect extra-abdominal. The growth was found to involve the colon for one inch and a half of its extent; no enlarged glands were detected; the bowel above the stricture was greatly hypertrophied and was so distended as to equal the adult forearm in circumference. The gut below the stricture was thin, empty and contracted. The colon above and below the part to be excised was clamped by the fingers of my house surgeon, Mr. Speechly. Seven inches of the sigmoid flexure were then cut away with scissors. The contents of this segment were received upon a special sponge. The interior of the bowel was cleaned. A V-shaped portion of the mesocolon was excised with the bowel. This gap in the sigmoid mesentery was at once closed by two sutures of No. 2 silk. The next step was to partly close the divided end of the greatly distended upper segment until the part left patent should correspond to the lumen of the collapsed bowel below. This was done by means of a continuous suture of the mucous membrane, followed by an outer line of Lembert's suture. For each suture No. 1 silk braid was employed, a milliner's needle being used for the continuous suture and a small round Hagedorn's needle for the interrupted stitches. This upper segment of the bowel was as rigid as if made of leather. The two ends of the gut were now joined together in the same way—i.e., by a continuous suture of the mucous membrane and an outer line of Lembert's suture. Whilst I was introducing the interrupted stitches at one end my colleague Mr. Openshaw was inserting them at the other. I should judge that about fifty sutures were employed. The assistant's fingers were now relaxed and the contents of the bowel allowed to pass through. It was apparent that the suture line was at all points water-tight. The sutured bowel was dropped back into the abdomen and the wound in the parietes was closed in the usual way. The operation occupied one hour and a quarter. The patient was sick three times after the operation, and during the convalescence an injection of morphia was given on three occasions only. The highest temperature reached was 101° on the evening of the second day. The bowels first acted on the third day, when five liquid motions were passed. Between the third and the eighth days the bowels acted twenty-one times. In these motions, which were for the most part liquid, fifteen cherry stones which were swallowed in the previous summer were discovered. The parietal wound was first dressed on the tenth day, when it was found to be soundly healed and all the sutures were removed. On that day the patient was ordered fish. Subsequently to this a slough of mucous membrane containing one of the continuous sutures was discovered in a motion. The patient's recovery was uninterrupted, but her discharge from the hospital was delayed by the tardy healing of a bedsore which had formed before the operation. She returned to the country on Jan. 18th, 1893. She had been up and walking about for some time before this date, but the bedsore had not quite healed when she returned home. The bowels were now acting regularly without aperients; the abdomen was flat; there were no ascites, no pain and no vomiting. The stricture exhibited the ordinary features of cylindrical epithelioma, and the narrowed passage would barely admit a No. 12 catheter.

Wimpole-street, W.

TWO CASES OF AURAL PYÆMIA TREATED BY OPERATION.

BY ALFRED PARKIN, M.S., M.D. LOND., F.R.C.S. ENG.,
SENIOR ASSISTANT SURGEON TO THE VICTORIA HOSPITAL, HULL.

IT is only recently that cases of septic thrombosis of the lateral sinus following ear disease have been successfully treated. Cases are still recorded from time to time which progress to a fatal termination, and it is only by adoption of a radical method, such as that described and so successfully carried out by Mr. W. Arbuthnot Lane,[1] that such a result can be avoided. The following two cases are good examples of the value of ligaturing the internal jugular vein and removing septic matter from the lateral sinus in patients far advanced in pyæmia, whose recovery without interference was, to say the least, most doubtful.

CASE 1.—A child aged nine years was admitted into the Victoria Hospital, Hull, on Dec. 9th, 1892, suffering from great pain in the head and delirium. He had scarlet fever when three years of age, and had had headaches ever since. On Nov. 27th, 1892, he complained of earache on the right side, and during the succeeding nights was said to have been unconscious. On Dec. 1st otorrhœa came on, and he was sick once. He had diarrhœa on Dec. 7th and 8th, and he had had several bad attacks of shivering. On admission the patient seemed dull and stupid; he complained of severe pain all over the right side of the head. There was a foul discharge from the right ear, with tenderness over the mastoid and over the deep vessels of the neck; the tongue was dry and brown, the eyes were jaundiced and the liver was one inch below the ribs and very tender; there were numerous râles at the base of the right lung, with tubular breathing at one spot; both optic discs were swollen, the right more than the left. The evening temperature was 104·4°. Under chloroform a curved incision was made behind the right ear and a small collection of pus around the aperture of exit of the mastoid vein confirmed the diagnosis. The antrum was first opened by gouging away half an inch of hard bone; it was found to be full of foul pus, which was cleared away, as well as the contents of the middle ear, and the whole cavity disinfected. The bone bounding the lateral sinus was then gouged away and a quantity of extra-dural pus extending along the lateral sinus groove was removed. The sinus was obviously thrombosed, consequently the internal jugular vein was exposed low down in the neck. The walls of the vein were so thickened by periphlebitis that it resembled more an empty carotid artery than the normal vein. The vein was tied as low down as possible in two places and the piece excised showed numerous flaky deposits on the intima. The cut ends of the vein were disinfected and the wound sewn up. The lateral sinus was then opened up, as much of the clot as possible scraped out, and the cavity treated with perchloride of mercury solution. A drainage-tube was placed in contact with the sinus wall and a second one in the antrum. The next day the headache had gone and the patient's general condition had improved. Convalescence was slow, the lung signs gradually disappeared, the jaundice passed off and the only point of interest in the course of recovery was a rise of temperature to 104° on Dec. 18th, accompanied by severe headache, with marked œdema of the eyelids, especially on the right side. This seemed to indicate a probable extension of the thrombosis to the right cavernous sinus, but the symptoms subsided gradually along with the temperature. The neck wound and greater part of the mastoid wound healed by primary intention; and the patient, after being kept under observation until Feb. 15th, 1893, was discharged in excellent health, all wounds healed (very slight mucoid discharge from the right ear), and able to hear ordinary conversation with the affected ear quite well.

CASE 2.—An infant aged eleven months was admitted into the Victoria Hospital on Dec. 12th, 1892. Three months previously she was in the sanatorium for scarlet fever, and two months afterwards a discharge was first noticed from the left ear, followed in a few days by facial paralysis. She left the sanatorium fourteen days ago, and since then has had several fits, the last a few hours before admission. When admitted the child seemed in a serious condition; she was semi-conscious, her lips were blue, and she called out from time to time, putting her hand up to the left side of her head; the pulse was very rapid; the temperature was subnormal. There was a small swelling behind the left mastoid, about one inch and a half behind the ear, and a foul discharge from the ear itself; the left side of the face was paralysed; bronchial breathing and râles at the base of the left lung were audible; nothing abnormal could be felt in the neck. Under chloroform the small abscess at the back of the mastoid was opened and found to communicate through the foramen of the mastoid vein with the interior of the skull. The antrum was opened and it and the cavity of the middle ear were cleansed of a quantity of foul material. The lateral sinus was exposed and found to be full of broken-down clot, which was all scraped away. The internal jugular vein was then exposed, found empty, and tied; there was no periphlebitis at the point of application of the ligature. The recovery in this case was more rapid than in that of the last patient. The facial paralysis and broncho-

[1] Treatment of a case of Pyæmia resulting from Disease of the Middle Ear: THE LANCET, Jan. 21st, 1893. Of eight cases so treated seven recovered.

pneumonia gradually disappeared, and the child was discharged on Jan. 14th, 1893, quite well, with no otorrhœa, the wounds healed, and an increase of weight of one pound during the last fortnight of its stay in the hospital.

The diagnosis in the first of these cases was remarkably easy; the patient had symptoms of advanced pyæmia, with a foul otorrhœa, tender swelling over the deep vessels of the neck, and swollen optic discs. How long the septic thrombosis had existed is doubtful, but the case is of interest as indicating how radical treatment may save life even though the pyæmia may have reached an advanced stage. In the second case septic thrombosis of the sinus was only suspected when it was found that the small abscess cavity led through the mastoid vein aperture into the skull. In a patient so young (eleven months) the difficulties of both diagnosis and treatment are much increased, but it was remarkable how soon after the operation the child began to recover, and how rapidly convalescence took place. An early diagnosis, followed by prompt removal of the septic foci, is the correct treatment in such cases, and there is no reason to doubt that such treatment may be advantageously applied to other cases of like nature—e.g., umbilical pyæmia. In doubtful cases of middle ear disease, after exploring the mastoid antrum with a gouge, the exposure and examination of the lateral sinus and posterior fossa of the skull, whilst adding greatly to the risk, may succeed in preventing dangerous developments, especially in the case of extra-dural abscesses, which seem to remain latent for some time and then suddenly give rise to meningitis or lateral sinus mischief.

Albion-street, Hull.

THE COURSE OF THE INFERIOR LARYNGEAL NERVE.

BY W. RAMSAY SMITH, M.B., C.M., B.SC. EDIN.

THE late Dr. Herbert Davies's paper on this subject in THE LANCET of Jan. 21st is one of those demonstrations that seem so neat, and the truth of which seems so desirable, that one hesitates to criticise them in case they should break down. As an eminent physician remarked to me recently regarding another physiological problem, "I should feel sorry if it were proved wrong, for it is such a pretty piece of physiology." I do not mean to say that Dr. Davies's demonstration is wrong, but I wish to point out one or two things pertinent to the subject that have to be considered before one can say that the explanation given can be said to be complete or proved. It appears to me that Dr. Davies's demonstration involves one or two assumptions that require proof, and one or two omissions that must be taken into the calculation. To take them *seriatim* they are:—

1. The assumption, running through the whole argument, that respiration is a result of the combined action of the diaphragm and the muscles that open and close the rima glottidis. So far as regards quiet breathing this is not proved. The rima glottidis does not appreciably change its size and shape in normal breathing; and the recurrent laryngeals are not necessary to ordinary breathing. Respiration can go on after section of both recurrent laryngeals, the rima glottidis having the patency it usually acquires only after death. It would seem, therefore, that so far as regards ordinary respiration such combined and concerted action between the phrenic and recurrent laryngeal nerves as Dr. Davies supposed does not necessarily occur, and it is questionable if it occurs at all. The whole demonstration might be made to turn upon this prime assumption and the proof of it. But in view of the interest that attaches to other parts of the paper I may be pardoned for passing on to them.

2. Suppose it were demonstrated that concerted action between the movements of the vocal cords and the diaphragm were necessary for respiration, the question arises, "Is this brought about by the correspondence in length between the phrenic and the recurrent laryngeal nerves?" Is it really necessary that the impulses, in order to be effective, should pass over the same length of nerve and reach the respective nerve terminations at the same instant of time? At first sight this seems to be a beautiful and exact demonstration; but two things have to be considered: The first is the difference in length between the right and left recurrent laryngeal nerves. The impulse by the right must reach the right side of the larynx at a moment appreciably in advance of the impulse that reaches the left side by the left nerve. This difference is considerable, as any one may calculate. The second consideration, which is to the same effect, is that in cases where the right inferior laryngeal nerve does not "recur" but passes straight to the larynx (I refer to the not uncommon condition where the right subclavian artery arises from the arch of the aorta) the proper ratio of lengths of the right and left inferior laryngeals and the phrenics is enormously changed, and yet respiration and voice production go on as usual.

3. Another assumption, a very common one, that seems at first sight self-evident, is that the phrenic nerve by its distribution, in the human body, on the inferior surface of the diaphragm is less subject to pressure than if it were distributed on the upper surface. This may or may not be true, but I imagine that any theory, at any rate, the ordinary theory, advanced to prove it will be found to involve a nice fallacy in physics.

These three considerations, it appears to me, must be taken into account in estimating the value of Dr. Davies's posthumous contribution. I would add another—viz., the concerted action between the muscles supplied by the superior and the recurrent laryngeal nerves. The subject of the simultaneous innervation of antagonist muscles, especially those concerned in making delicate movements, is almost entirely overlooked in our text-books and in our teaching, but it furnishes the key to a great many difficult problems.

I am not prepared to say that the course of the recurrent laryngeal nerve is not to be explained with reference to the concerted action between the muscles supplied by it and the diaphragm supplied by the phrenic, but it seems to me that Dr. Davies's theory that it is to be so explained involves as many difficulties, if not more, than does the theory that the relative lengths of these nerves have nothing to do with the matter.

Theories of this description are very fascinating. They are often wrong, but criticism of them not infrequently points the way to a truer explanation. The works of old masters in science, medicine and philosophy are full of them, some fanciful in the extreme, some evidently erroneous, some seemingly true, yet all requiring rigorous testing. To mention many of those theories would be tedious and useless. I may take, however, from my note-books a few instances of theories taught even now that have probably as little foundation in fact as the theories that have been exploded ages ago:

1. Normal knock-knee in women is said to be due to the greater width of the pelvis. Let it be granted that the pelvis is wider in women, as it is granted that women possess ovaries: how does width of pelvis explain knock-knee? Does width of pelvis explain the greater degree of knock-elbow in women?

2. In the act of swallowing, the lower jaw, it is said, is firmly applied to the upper. This is said to be necessary in order that the muscles attached to the lower jaw may have a fixed point to act from. But swallowing is possible without fixing the lower jaw to the upper. It is not possible, however, without fixing the tongue.

3. Spigelius says that the function of the buttocks is to form a cushion on which the body may be softly supported, for the purpose of divine cogitation. Is there any real advance on this theory?

4. It is taught that the great preponderance of muscles inserted on the inner aspect of the tibia is to be explained in relation to the unscrewing of the knee-joint at the beginning of the movement of flexion. I have examined this theory in the *Journal of Anatomy and Physiology*, and have ventured an explanation that may also cast some light upon the function of the buttocks.

5. The "reflex pain" in the knee in cases of hip-joint disease is explained by the fact that the obturator nerve supplies both. Is this a real explanation? In this connexion I may state that I have found that stimulation of a spot of skin about an inch to the left of the external occipital protuberance is associated with a corresponding sensation at the same instant, referred to a spot just over the tip of the twelfth rib on the left side.

These are only a few instances, but they illustrate how very necessary it is to apply a little logical criticism to every theory in anatomy and physiology, however well established it may appear to be. Medical science appears to suffer more from want of well-trained minds than from want of the spirit of investigation.

Inverleith-gardens, Edinburgh.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL AND THERAPEUTICAL.

ON THE ESTIMATION OF SUGAR IN URINE BY THE PICRIC ACID METHOD.

BY SIR GEORGE JOHNSON, M.D. LOND., F.R.S.,
CONSULTING PHYSICIAN TO KING'S COLLEGE HOSPITAL AND PHYSICIAN EXTRAORDINARY TO THE QUEEN.

I AM anxious to explain to the profession my reasons for making a slight modification of the standard colour solution which for some years I have used in estimating the amount of sugar in urine. I have recently discovered that the manufacturer of my picro-saccharometer has been in the habit of graduating the tube by *external* linear measurement and not by its *internal* capacity. The tubes employed not being of uniform calibre throughout their length, the result has been inaccurate graduation. The standard colour was arrived at by imitating the tint given by a four-grain to the ounce solution of pure glucose, boiled with picric acid and potash, according to the method described by me in my two lectures on Albumen and Sugar-testing[1] and in the chapter on Sugar-testing in my "Medical Lectures and Essays,"[2] and subsequently diluting four times in the graduated tube. Now, as the upper divisions of the tube were more capacious than the lower, the result was a slight degree of over-dilution and a somewhat paler colour than would have been produced in an accurately graduated tube. Inasmuch as the same tube and the same method of procedure were adopted in analysing urines, the results obtained by me have been practically correct. In order to avoid any error in future I have corrected the standard colour solution by imitating the tint produced by diluting a solution of pure glucose in an accurately graduated tube made for me by Mr. C. E. Müller, who will guarantee the accuracy of all graduated tubes supplied by him for my picro-saccharometer. The corrected formula for the ferric acetate standard is as follows: One drachm of liquor ferri perchloridi fort. (P.B, sp. gr. 1·42), four drachms of acidum aceticum glaciale (P.B., sp. gr. 1·058), two drachms of liquor ammoniæ (P.B., sp. gr. 0·959); distilled water to four ounces. The only change in this formula consists in the addition of twenty minims of liquor ammoniæ in the four fluid ounces. Since this method of analysis gives extremely accurate results, it has appeared desirable to indicate even so slight a source of error as that which I have here described.

Savile-row, W.

DEATH OF A CRETIN AGED TWENTY YEARS.

BY ROBERT KIRK, M.D. GLASG.,
PHYSICIAN TO THE DISPENSARY FOR DISEASES OF WOMEN, GLASGOW WESTERN INFIRMARY.

THIS case was one of five reported in THE LANCET of Aug. 23rd and 30th, 1884, where an engraving of it is also shown (case of G. B——). The patient was then twelve years of age and was only three feet in height. As he did not grow in the interval and became even more swollen, he presented at last an extraordinary illustration of myxœdema. The trunk was quite globular, the supra-clavicular eminences were enormous and the skin over most of the surface as flabby as that of the eyelids in an ordinary case of the affection. I looked up the case, which I had not seen for several years, about a month ago, with the view of giving the patient the benefit of thyroid juice. I found, unfortunately, that he had been ailing for several weeks, having lost appetite and become much duller than usual. His pulse was 100 and the temperature 99°, which for him indicated a febrile condition. I suspected some pulmonary affection, but the respiratory sounds were so feeble that nothing could be elicited by auscultation, and there seemed to be no dulness on percussion. I administered some slightly fried cow's thyroid for two days, but as there was no improvement and the parents did not seem anxious to go on with it I desisted. He became gradually worse, and in a few days more I found him nearly comatose, breathing stertorously, with the Cheyne-Stokes type of respiration. His mother said his breathing had always been of this character during sleep for the last twelve months. She added that he had often said of late that he would be "choked," although it had never seemed to me at any of my visits that there was much dyspnœa. It was perhaps to be regretted that the treatment was not pushed, as this was just one of the symptoms which ought to have been soon relieved by thyroid feeding. In two cases of myxœdema in adults at present under this treatment (one of which was published in THE LANCET of June 16th, 1888, as a "Case of Tetanic Spasms during Lactation in a Cretinoid Woman") I found the trouble arising from the constant necessity of swallowing mucus wonderfully relieved in two days. Briefly, it may be said that this cretin died of gradual suffocation, brought about by the great submucous œdema of the glottis and air passages. At the recent discussion in Edinburgh Dr. Affleck remarked that in one of his cases he had found serious impediment to breathing from œdema of the fauces.

Partick, N.B.

[1] Smith, Elder and Co., London. [2] J. & A. Churchill, London.

ON EXCISION OF THE TONSILS.

BY H. A. LEDIARD, F.R.C.S. ENG. &c.,
SURGEON TO THE CUMBERLAND INFIRMARY, CARLISLE.

THIS operation is so commonly performed and so constantly needed that it seems not only impossible but unnecessary to add another line to what has already been written on the subject; but it may be that what I wish to say is not familiar to all practitioners. In removing the tonsils I have adhered to the clinical teaching of James Syme, using only a probe-pointed curved bistoury and a vulsellum with three prongs to one blade and two to the other, with or without a self-retaining tongue depressor. With regard to the guillotine, if that instrument is employed, it will be found that, whilst some tonsils are too large to enter the fenestra of an ordinary instrument, some mouths are too narrow for a large instrument, and therefore three sizes are made by instrument makers, thereby adding considerably to the surgical instrument bill of the surgeon who prefers that method. In using the simple tools that I have named I have made it a practice to remove the left tonsil with the right hand and the right tonsil with the left, holding the vulsellum in the reversed order. A little convenience I have adopted in place of putting a bit of strapping on that part of the bistoury which is not wanted is a piece of rubber tubing slipped over the blade of the knife so as to leave an inch bare at the probed end. This manœuvre is a great help, and it is more than probable that other surgeons have adopted a similar course although I have never seen it mentioned anywhere. It is not often that it is necessary to remove the tonsils of grown-up persons, but I have had occasion to remove a tonsil for oft-repeated abscesses in the substance with as good results as have followed removal for simple enlargement. As to an anæsthetic, many of my cases have been operated on under chloroform and as many without anything, the surgeon being usually influenced by the age of the patient and the wishes of the parent or guardian. Once I met with primary hæmorrhage lasting some hours and requiring a styptic application. Once only have I met with secondary hæmorrhage; it occurred on the fifth day and caused some alarm as the blood was swallowed and then brought up from the stomach. On March 8th, 1888, I read a few notes on excision of the tonsils before the Carlisle Medical Society, a society then flourishing but now in abeyance, and exhibited a number of tonsils which had been removed for chronic enlargement causing obstruction either to breathing, deglutition or speech; but in no instance have I ever operated when acute disease of the tonsil existed.

Lowther-street, Carlisle.

DISLOCATION OF THE HIP OCCURRING IN ACUTE RHEUMATISM.

BY F. E. NICHOL, M.B, B.C. CAMB., L.R.C.P. LOND. &c.

THE following case appears to be an instance of dislocation of the femur on to the dorsum ilii occurring without trauma in a child suffering from acute rheumatism.

A female child aged seven years was brought to me o

April 29th, 1890. Her mother stated that for ten weeks the patient had been suffering from chorea. The movements had been most marked in the upper extremities and the tongue, but scarcely noticeable in the lower limbs. About a fortnight before bringing the child she noticed a deformity of the right hip-joint, with bending and shortening of the limb. The child cried when touched or moved, but was free from pain when left at rest. There had been no "starting" at night. At the beginning of her illness there was swelling, heat and pain in the left ankle and knee-joints. No record of temperature observations was obtained. On examination the child was found to be very anæmic and emaciated. She lay with her right thigh adducted and slightly flexed on the abdomen, the knee semi-flexed and the foot inverted; there was marked shortening and the trochanter was one inch above Nelaton's line. In fact, she presented the classical signs of dorsal dislocation of the hip-joint. Gentle attempts to straighten or manipulate the limb gave great pain. With the exception of a loud systolic murmur at the apex of the heart, which was conducted to the axilla and clearly organic, no other physical signs were evident. There were no choreic movements. Chloroform was administered by Dr. Arthur Rowe, and no alteration was observed in the deformity. Reduction was easily effected by manipulation and a long outside splint applied. The subsequent history of the case was simple. The child's general health rapidly improved; the splint was removed in three weeks, and the joint was found to be healthy and freely movable. Four months later the father wrote that the child was "quite well save for a slight stiffness."

Cases of dislocation occurring in the course of acute rheumatism are so rarely recorded that it may be well to emphasise the salient features in this case. That it was a true dislocation is evidenced by the shortening, flexion and inversion of the limb and by the other marked signs of luxation, by the persistence of these conditions under chloroform, by the immediate restoration of the limb to its proper form by operation and by its rapid and complete recovery. That the child had suffered from acute rheumatism seems clear from the history of pain and swelling of the joints, followed by an attack of chorea, endocarditis and marked anæmia. The mechanism of the occurrence is not quite clear, but it is probable that a certain amount of effusion occurs into the synovial cavity accompanied by inflammatory softening and stretching of the ligaments, resulting in displacement of the head of the femur; or, as was suggested in an annotation in THE LANCET,[1] "it may be that owing to the diseased state of the joint the customary co-ordinate support of the muscles is wanting, and that as a result of the inordinate action of a certain group of muscles when the limb is in a 'vicious' attitude the dislocation may be brought about." I have been able to trace few similar cases; the most noteworthy are recorded by Stanley[2] in England and by Brown[3] in America. The annotation in THE LANCET referred to above mentions seven cases recorded by M. Verneuil at the Société de Chirurgie, but gives no details.

Ethelbert-terrace, Margate.

SQUAMOUS EPITHELIOMA OF THE EXTERNAL EAR

BY W. S. CRAWFORD, B.A. CANTAB., F.R.C.S. EDIN.,
ASSISTANT SURGEON, LIVERPOOL CANCER AND SKIN HOSPITAL.

THE following case appears to be worth recording on account of the comparative rarity of the affection.

The patient from whom the growth was removed was a man aged sixty-four. He first noticed fourteen months ago a small wart in the upper part of the fossa of the helix. This increased very gradually in size until about seven months since, when he received a blow on the side of his head from a cow's tail which caused the warty growth to bleed. After this time it grew more rapidly and spread over to the back part of the ear; it often bled and discharged matter continuously, which, decomposing, gave rise to extreme fetor. When he came under my notice recently the whole of the external ear except the concha and lobule appeared to be composed of an irregular soft warty growth, smeared over with fetid pus and a few small blood-clots. The mass averaged an inch in thickness, there was very little deep ulceration, and the tumour was particularly soft and papillomatous in character. The growth was removed by simply slicing the ear off, leaving only the deeper part of the concha, the antitragus and the lobule; no enlarged lymphatic glands could be felt. A microscopical examination of the specimen was made by my friend Mr. Thelwall Thomas. The sections showed well-marked squamous epithelioma.

Mount Pleasant, Liverpool.

[1] THE LANCET, vol. ii. 1883, p. 919.
[2] Medical and Chirurgical Transactions, 1841, p. 132.
[3] Boston Medical Journal, Sept. 29th, 1870.

SENSITIVENESS OF THE PERITONEUM.

BY T. R. JESSOP, F.R.C.S. ENG.,
CONSULTING SURGEON TO THE LEEDS GENERAL INFIRMARY.

HAVING occasion a few days ago to perform inguinal colotomy, I asked Mr. Moynihan, our resident surgical officer, to test the sensitiveness of the exposed peritoneum so soon as the patient should have completely recovered from the anæsthetic. Mr. Moynihan informs me that he pricked, scratched, and handled the exposed bowel (which appeared to be in no way altered from its normal condition), with the result that the patient declared her sensation was as if she were being "lightly touched with a feather." A similar result was obtained from like tests applied to the turned-up edge of the parietal peritoneum. At the same time the patient felt acutely the prick of a pin applied to the skin in the neighbourhood of the wound and elsewhere.

Park-square, Leeds.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. THOMAS'S HOSPITAL.

TREATMENT OF THE ULCERATIVE LESION IN LARYNGEAL TUBERCULOSIS, WITH SOME REMARKS ON THE CONSTITUTIONAL TREATMENT BY LARGE DOSES OF CREASOTE.

(Under the care of Dr. F. SEMON.)

THE following cases of laryngeal, coupled with pulmonary, tuberculosis are quoted to show the effect produced by the internal administration of creasote in large doses and the energetic application of lactic acid locally. No case is reported that had not characteristic lung symptoms, so that we can safely assume all the lesions were truly tubercular. It is absolutely essential that the creasote be perfectly pure, as otherwise it may cause dyspepsia, but in estimating the action of the drug we must not forget the frequency of that symptom in phthisis. It must be given immediately after meals and on no account whatever when the stomach is empty. It is taken either in pills or capsules containing one minim of creasote; but so long as the creasote is pure, either are equally efficacious. At first one minim after meals three times a day is given; then, after a day or two, two minims; and the dose is slowly increased until the patient is taking nine, twelve or even fifteen minims per diem. The solutions of lactic acid used are in the strength of 20, 30, 40, 50, 60 and 70 per cent., which are also gradually increased according to the toleration of the larynx and the necessities of the case. In most cases it is not necessary to employ solutions stronger than 40 to 50 per cent. It is applied two, three or four times a week, as the case requires, and before every application the larynx is well brushed with a 20 per cent. solution of cocaine. After a few minutes the acid is applied on absorbent wool firmly wrapped round rectangular laryngeal forceps. It must be rubbed into the ulcerating part with a very fair amount of force, so that the breaking-down tissue is removed and the acid comes into direct contact with the floors of the ulcers. Just as in a tuberculous joint the diseased tissue is forcibly scraped, so must the larynx be treated; and herein lies the great advantage of firm forceps

over a brush or pledget of wool. In cases where there is much œdema, it must first be allowed to subside and inhalations or insufflations of sedatives are to be preferred. It is needless to say that the application must be made under the guidance of the laryngeal mirror, not only because this affords the only certainty that the diseased parts are actually reached, but also because the forcible application of such strong lactic acid solutions to hitherto unaffected parts would be anything but an indifferent measure. In cases in which, in addition to ulceration, there is abundant granulation tissue it may be necessary, previously to the application of the lactic acid, to scrape away the granulations by means of Heryng's or Krause's laryngeal curette. For the following account we are indebted to Mr. Marcus A. Dorman, clinical assistant to the throat department.

CASE 1. *Ulcerating swelling in inter-arytenoid fold; left cord hidden by granulation tissue; left arytenoid swollen.*—A woman aged twenty-five.

June 20th.—Lungs: Left apex, impairment of resonance and some moist sounds. Two minims of creasote were ordered three times a day and the application of a 30 per cent. lactic acid solution twice a week.

July 21st.—All ulceration has disappeared; there is slight granulation tissue on the left ventricular band, but the cord is visible throughout its entire length; the voice is stronger and clearer.

The patient left for India on Aug. 6th, and wrote in October saying that she was still taking capsules, which caused no disagreeable effects. A medical man had examined her throat and stated that it was well. Her cough was much less troublesome and she slept well at night. The patient was then taking nine minims a day.

This case was fortunately treated at a very early stage and was rapidly relieved.

CASE 2. *Swelling and ulceration in inter-arytenoid fold &c.*—A woman aged twenty-seven; occupation housework; weight 9st. 3lb.

Oct. 20th.—Lungs: Impairment of resonance of the right apex, but no crepitations, hæmoptysis, night sweats, anæmia, voice weak and hoarse. A 20 per cent. solution of lactic acid was ordered twice a week and two minims of creasote three times a day.

Nov. 17th.—There is less ulceration; ordered nine minims of creasote daily.

Dec. 1st.—Lactic acid discontinued as no ulceration can be seen; weight 9st. 10lb. The hæmoptysis has ceased and the voice is clear and stronger.

This is also an early case and the increase in weight argues well for the treatment.

CASE 3. *Early ulceration of larynx.*—A porter aged thirty-seven.

July 12th.—The voice is hoarse. Lungs: There is dulness at the right apex, with tubular breathing; also much cough and expectoration. A 30 per cent. solution of lactic acid was ordered three times a week and creasote.

Oct. 4th.—The ulcers are healed, and there is some granulation tissue on the cords. The lactic acid has been discontinued, but nine minims of the creasote are to be given daily.

Nov. 24th.—The cough is better, and there is less expectoration; the patient is gaining in weight. There is no lesion in the larynx.

Dec. 15th.—The voice is normal; the cords are pink, but no ulceration or granulation tissue is to be seen.

The lungs in this case were consolidated at the apices, but the symptoms were much relieved and the larynx healed.

CASE 4. *Much swelling and ulceration on epiglottis; small swelling in inter-arytenoid fold; cords quite hidden by granulation tissue.*—A man aged fifty-two.

July 15th.—Lungs: There are signs of extensive cavity in the right upper lobe; cough and expectoration are excessive; the voice is very thick and indistinct. The epiglottis was scraped with a curette and a 40 per cent. solution of lactic acid was applied, and a 30 per cent. solution to the interior of the larynx three times a week. Six minims of the creasote were ordered daily.

28th.—Both cords are visible; the epiglottis is still ulcerating and deglutition is very painful.

Aug. 11th.—There is no ulceration in the larynx, but there is still some on the epiglottis; supervention of melæna. The patient complains that he cannot swallow pills. The lactic acid ordered to be discontinued.

23rd.—There is much swelling of the interior of the larynx. The patient died on Sept. 2nd from general tuberculosis.

This case was so very far advanced that but little could be done. The ulcers in the larynx healed, but the general disease increased. The inability to take the creasote was very unfortunate.

CASE 5. *Ulceration on posterior part of right cord and inter-arytenoid fold.*—Telegraphist aged twenty-seven; weight 8st. 11lb.

Oct. 5th.—Lungs: Impairment of resonance,, increased vocal resonance and metallic crepitations were audible at the front and back of the right upper lobe. The patient has suffered from hæmoptysis, cough and expectoration for two years. The voice has been thick for seven or eight weeks. A 30 per cent. solution of the lactic acid was ordered twice a week and six minims of creasote daily.

Nov. 11th.—The patient has not attended for three weeks and has not taken the creasote. There are much swelling and ulceration of the larynx and of the arytenoids, so that deglutition is impossible. The throat was painted with cocaine before each meal, which consisted of a pint of milk and two eggs beaten up in it. In three days the swelling had disappeared, and a 50 per cent. solution of the lactic acid was applied, whilst twelve minims of creasote were ordered daily.

24th.—The patient is much better. There is no ulceration and the weight is 8st. 10lb.

The increase of weight here is a proof of the amelioration of the patient's condition. It also illustrates the advantages of such a great excess of fats and proteids—i.e., ten ounces of proteids and fifteen ounces of fat—in enfeebled constitutions.

CASE 6. *Deep excavating ulcer on epiglottis; arytenoids swollen and ulceration in inter-arytenoid fold; voice feeble but clear.*—A plumber aged forty-one. The patient attended at Brompton Hospital in July, 1885, under Dr. Acland. The notes of the case then were: "Hæmoptysis sixteen weeks, with cough and expectoration; losing weight."

June 22nd, 1892.—There were signs in both lungs, chiefly in the right. A 20 per cent. solution of the lactic acid was ordered to be applied twice a week and two minims of creasote to be taken three times a day.

July 6th.—The ulcer on the epiglottis was cicatrised. A 40 per cent. solution of lactic acid was ordered and three minims of creasote three times a day.

21st.—There is no ulceration in the larynx. The patient complains of pain shooting down the right side of the neck. He left London for Dover, and discontinued the creasote.

Sept. 4th.—His general condition is worse. There is a white swelling under the anterior part of both cords. There are no ulcers.

Oct. 1st.—He was admitted to hospital, and lactic acid has been continued as required, a 70 per cent. solution frequently being used; his voice is stronger.

Jan. 17th, 1893.—There is no ulceration, but he suffers from pain shooting to the ear, which seems to be temporarily relieved by strong solutions of lactic acid but resists the insufflation of morphia.

This case is undoubtedly slowly progressing, but the immense relief afforded by the lactic acid in deglutition is sufficient warrant for including it here.

CASE 7. *Great swelling of epiglottis, which is covered with semi-transparent nodules and granulation tissue; both arytenoids enlarged, so that the cords are only just visible; abundant muco-purulent secretion; voice almost lost.*—A shopman aged twenty-nine.

Nov. 15th.—Lungs: There are signs of cavity at the left apex. A 30 per cent. solution of the lactic acid was ordered three times a week, and two minims of creasote three times a day.

Dec. 7th.—The creasote was increased to three minims three times a day.

Dec. 15th.—The larynx is free from secretion and there are no ulcers to be seen.

Jan. 13th, 1893.—The general health of the patient is improved, he is less anæmic, and the swelling of the larynx has decreased.

This case presented great difficulty in inserting the forceps owing to the extreme swelling of the arytenoids.

CASE 8. *Small ulcerating swelling of inter-arytenoid fold.*—A warehouseman aged twenty-seven.

Oct. 18th.—Lungs: Crepitations are to be heard at the left apex. One minim of creasote was ordered three times a day and a 20 per cent. solution of the lactic acid twice a week.

Dec. 6th.—No ulceration is to be discerned in the larynx.

Jan. 3rd, 1893.—The patient has been in Brompton Hospital

for six weeks. His cough is better, there is less sputum and no ulceration.

This was an early case; the ulcers soon healed.

Remarks by Dr. SEMON.—The above cases illustrate the method of treatment of pulmonary tuberculosis accompanied by laryngeal ulceration which has been practised for the last few years at the Throat Department of St. Thomas's Hospital. This method certainly is a great step in advance upon all the previous modes of treatment recommended during the last ten or fifteen years, and to which a trial has been given in the department. It will of course be understood that the constitutional treatment by large doses of creasote cannot claim in any way, so far as my experience is concerned, to be looked upon as a true specific against tuberculosis, but it can be positively stated from a large experience both in hospital, and even more in private practice, in which the patients more strictly attend to their health, that as a symptomatic treatment it excels every other form at present known. The patients gain in weight, their appetite improves, the night sweats diminish, the expectoration becomes less purulent, and in a good many cases, especially if not coming under observation at too late a period, the disease actually appears to become arrested. Such, at any rate, has been the case in several instances in my private practice, in which I have had the opportunity of watching the patients for periods of two or three years, during which some of them have taken up to 10,000 creasote capsules. Only in very rare instances patients cannot digest the creasote in such large doses, and I would especially warn against looking upon every occasional indigestion as an indication to the effect that the creasote treatment must at once be given up. But it is absolutely necessary, first, that the creasote preparation should be *perfectly pure*, and, secondly, that the capsules or pills be taken *immediately* after meals. Concerning the lactic acid treatment of the laryngeal complication, this, too, is a purely symptomatic one, and cannot claim to "cure" the laryngeal disease. Considering, however, how much laryngeal ulcerations, by producing pain, cough and dysphagia, contribute towards hastening the fatal end, any relief to these three serious symptoms is a distinct gain, and it can certainly be said of the lactic acid treatment, as described above, that it surpasses all methods previously recommended in attaining within a comparatively short time, and for a longer period than any other method known to me, the desired effect.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, PLYMOUTH.

PAROTITIS FOLLOWING INJURY TO THE ABDOMEN.

(Under the care of Mr. PAUL SWAIN.)

IN this case the inflammation of the parotid gland was noticed three weeks after the occurrence of an injury to the abdomen, the nature of which was uncertain. It is a point worthy of note that the severe vomiting ceased when the inflammation of the parotid gland was at its height, and convalescence rapidly followed. The close relationship which exists between the parotid gland and the contents of the abdomen is again exemplified in this case. Our readers will remember the paper on this subject by Mr. S. Paget.[1] He found that out of 101 cases 10 followed injury or disease of the urinary tract; 18 of the abdominal wall, subperitoneal or pelvic cellular tissue or peritoneum; 50 followed injury, disease or temporary derangement of the generative organs. In 93 out of the 101 cases it was an isolated event, not pyæmic. For the notes of this case we are indebted to Mr. Stanley Thomas, house surgeon.

A child aged eleven years on Oct. 21st, 1892, fell from a pony, injuring her left leg and shaking herself severely. She was admitted to hospital on the 26th, and was found to be suffering from a separation of the lower epiphysis of the left femur. On the 27th she began to vomit. The bowels had not been opened since the day of the accident. The next day she still vomited frequently. The bowels were opened after an enema. On the 31st she seemed better, and was able to take milk and lime-water. On Nov. 6th she began to vomit again, and on the following day the sickness was very severe and the child looked extremely ill. The tongue was very dry and the abdomen very retracted, except in the epigastric region, where there were some fulness, great tenderness and dulness on percussion. The temperature was 99·8° and the pulse very feeble. The child had become emaciated during the past few days. She was fed by nutrient enemata. On the 9th she continued to vomit large quantities of dark-green fluid, vomiting as much as from eight to ten ounces at a time. On the 11th slight swelling and great tenderness were noticed in the region of the left parotid gland, to which fomentations were applied. The next day the parotid was very swollen and looked as if it would suppurate. On the 14th the sickness had stopped. The patient was then taking peptonised milk.

Nov. 24th.—The child has not suffered from sickness since the 14th; there is no tenderness across the abdomen; the dulness has gone and the inflammation of the parotid has quite subsided. The patient left the hospital on Dec. 9th quite well.

[1] THE LANCET, Feb. 12th, 1887.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Annual General Meeting.—Supra-pubic Prostatectomy.

THE annual general meeting of this Society was held on March 6th, the President, Mr. Hutchinson, in the chair.

The annual report of the Council was submitted, together with statements from the treasurer and honorary librarian. The financial position was stated to be very satisfactory, and the number of Fellows had considerably increased during the past year. The Fothergillian Medal and Honorary Premium were awarded to Dr. W. R. Gowers for his Contributions to Practical Medicine, and in especial recognition of his work on Diseases of the Nervous System. The following officers were elected for the ensuing year:—President: Dr. John Syer Bristowe. Vice-Presidents: Dr. F. de Havilland Hall, Dr. F. T. Roberts, Mr. D. H. Goodsall and Mr. F. Treves. Treasurer: Mr. A. E. Durham. Librarian: Dr. W. H. Allchin. Honorary Secretaries: Dr. W. Pasteur and Mr. C. B. Lockwood. Honorary Secretary for Foreign Correspondence: Dr. Heinrich Port. Council: Dr. W. Collier (Oxford), Dr. C. J. Cullingworth, Dr. T. Colcott Fox, Dr. A. E. Garrod, Dr. Gerald S. Harper, Dr. G. A. Heron, Dr. Stephen Mackenzie, Dr. E. D. Mapother, Dr. H. Montague Murray, Dr. Samuel West, Mr. H. F. Bailey, Mr. C. A. Ballance, Mr. G. Buckston Browne, Mr. J. Cahill, Mr. F. Swinford Edwards, Mr. J. Hutchinson, Mr. A. Cooper Key, Mr. A. Marmaduke Sheild, Mr. G. R. Turner, and Mr. W. Whitehead (Manchester).

Mr. BUCKSTON BROWNE read a paper on Supra-pubic Prostatectomy. He began by pointing out that surgically the prostate must be considered as one single organ: its division into lobes was purely arbitrary. It was a sexual organ and only became concerned in the function of micturition when it became hypertrophied or enlarged. Chronic prostatic hypertrophy was (1) intra-vesical, (2) extra-vesical, or (3) both intra- and extra-vesical. The intra-vesical enlargement was the chief cause of difficulty in micturition. This intra-vesical growth was often like an egg projecting into the bladder, with the vesical urethral orifice at the apex of the egg. This ovoid projection might be deficient at any part of the urethral circumference. When wanting anteriorly and laterally, there was the so-called middle lobe enlargement, where from behind the urethral orifice there was a projecting prostatic mass acting like a bullet valve and often causing the bladder to be entirely dependent upon the use of a catheter for the voidance of its urine. More rarely the ovoid projection was only wanting in front, or it might be only on one side; in such cases it was nearly always continuously combined with a posterior enlargement; whilst so rarely as practically to be never met with, the intra-vesical growth was only found anteriorly to the urethral orifice. Intra-vesical prostatic outgrowths might be associated with considerable extra-vesical enlargement, and the latter might exist without the former and cause the patient so afflicted to be partially or completely dependent upon his catheter. He expressed the opinion that the intra-vesical growth alone could be removed with reasonable safety and with a fair prospect of recovery of the power of natural micturition. Without digital examination after supra-pubic cystotomy, it could only be approximately diagnosed. All urethrometers and the electric endoscope were useless and dangerous, the danger from their use being the likelihood of their causing severe urethral or catheter fever. There were, however, two

simple means of examination—namely, digital rectal examination and the careful measuring of the length of the urethra by means of the simple passage of the catheter. Any undue length of urethra would be an argument in favour of intra-vesical hypertrophy, and particularly so if, per rectum, the prostate was felt but little enlarged. If much extra-vesical growth was found, this must be allowed for in estimating the importance of the length of the urethra. If the urethra was nine inches long or more, and if not much growth could be felt by the rectum, there was almost sure to be intra-vesical hypertrophy. Should it be deemed desirable to sound the patient for stone, further evidence for or against the presence of intra-vesical growth would be obtained, for if such growth existed it would be found that the sound had to travel very much uphill into the bladder. It was then pointed out that a man with slight prostatic hypertrophy might live comfortably until exposed to any circumstances causing congestion of the prostate, and that then the catheter might be required, and used even for months, and the power of natural micturition return after all. Such cases must not be submitted to prostatectomy. Unhappily prostatic retention, whether partial or complete, generally came prepared to stay. The prospects of a man obliged to pass his urine by catheter were very good, and there was not the slightest need for him to undergo a severe operation such as prostatectomy at the outset of his catheter life. If he attended to the toilet of his bladder (which was briefly detailed) all would be well; unless the intra-vesical growth was very large, such a growth would baffle every precaution and should be removed. In some rare cases regular habitual auto-catheterism was so difficult that life under such conditions was not worth having. This difficulty might arise from the great curve of the prostatic urethra, the existence of false passages, and sometimes from the great ease with which the prostate would bleed if impinged upon and injured by the catheter, filling the catheter with blood clot, thus preventing the emptying of the bladder, and causing vesical spasm, as well as exhausting the patient by the constant loss of blood. Occasionally also patients were met with whose hands were crippled by rheumatism or by nervous affections, or who only possessed one hand, or whose special occupations made auto-catheterism difficult or even almost impossible. In all these cases supra-pubic prostatectomy since 1886 had become a practicable operation. The possibility of recovery of the bladder after complete removal of prostatic obstruction had been doubted by great authorities, but he gave full details of a case which was an answer in the affirmative, the gentleman operated upon being present at the meeting and the facts being beyond dispute. With reference to the details of the operation of supra-pubic prostatectomy, the operation should always be extra-peritoneal; all intra-peritoneal operations must add largely to the risk, and all that was necessary could be done through an extra-peritoneal incision. The bladder should always be opened upon a staff; if not, since the body of the prostate in these cases was frequently very large, it was very likely to be incised instead of the bladder. In removing the projecting prostate with forceps it should be twisted off in one piece if small, piecemeal if large. By twisting or torsion hæmorrhage was lessened. The intra-vesical growth should alone be attacked; no good would come of trying to remove the lateral lobes, even in part. In clearing the vesical urethral orifice of all surrounding projecting prostate tissue much assistance would be obtained by the presence of a metal sound in the urethra. Hæmorrhage was usually very free and would be all the more so if the prostate had been attacked with knife or scissors, the use of both of which instruments was deprecated. Dr. Keyes had suggested a lint tampon drawn into the prostatic urethra by a thread through the urethra, but Mr. Browne had found the bleeding sufficiently controlled by hot water irrigation, and all plugs must add to the patient's pain. In conclusion, he expressed his present opinions as follows: 1. Supra-pubic prostatectomy should never be undertaken at the outset of catheter life unless regular auto-catheterism was impossible. 2. The operation should never be undertaken as long as the ordinary catheter life was a tolerable one. 3. If, from any of the causes detailed, catheter life became intolerable, supra-pubic cystotomy should be resorted to. By means of this proceeding the bladder could be thoroughly explored and any stone removed, which in these cases might easily have escaped detection by the more usual methods of examination. The intra-vesical growth, if it were found to exist, could be fully examined and removed if the operator thought right to do so. If he deemed removal unadvisable, or if there was nothing which could be removed, he could leave the patient with a supra-pubic tube for permanent afterwear, with the certainty that he would have materially improved the condition of the patient. 4. Should the operator decide to remove the prostatic obstruction, there was a very good prospect, but not a certainty, of the power of natural micturition being restored to the patient.

The PRESIDENT alluded to the impartial character of the paper and regarded the conclusions as both wise and safe. He agreed that it was not advisable to interfere with anything more than the intra-vesical portion of the growth, though Mr. McGill had undertaken the removal of a great deal more. Some excisions of the middle lobe had been performed accidentally during lithotomy, when portions of prostatic growth lay in front of the stone and had been pulled out by the forceps as the calculus was being extracted. He himself had once done this, and as he found that other portions of growth were removable he cleared the whole floor of the bladder. This was done five years ago and the patient had made a perfect recovery. He agreed that enlargement of the prostate was a cause and not a consequence of bladder disease. He held that the old-fashioned silver catheter was a bad instrument for routine use and that a rubber catheter was much the best, the patient easily introducing it himself and an upward curve of the urethra not interfering with its introduction.

Mr. REGINALD HARRISON asked Mr. Browne whether he had limited his operative procedures to the method which he had described. He himself recognised prostatic obstruction as of two kinds: 1. A growth into the bladder of considerable masses of prostatic tissue, causing not only obstruction but cystitis. These should be treated, like bladder tumours, by removal by supra-pubic cystotomy. 2. In a certain proportion the obstruction was due to formation of "collars" or girths of prostatic tissue round the neck of the bladder, occluding the urethral orifice like a vice. He would not apply the supra-pubic operation to the latter class, such a procedure being protracted, severe and sanguinary. At the Congress at Copenhagen he had described a method he had adopted of dividing these collars in a few instances by a perineal incision and the introduction of a drainage-tube. Since that paper, which was read about ten years ago, he had operated eighteen times, in ten instances with partial or complete restoration of micturition after long periods of constant catheterism; one of these cases he proceeded to give in detail. In the entire series he could not recall a single instance of perineal fistula or of severe hæmorrhage.

Mr. BRUCE CLARK, referring to the question of diagnosis, said that the enlargement might lie either in the course of the urethra, at the neck of the bladder, or in the bladder itself. If within the organ, the growth should always be removed. With a bimanual examination under chloroform one might get a very fair idea of the size of the prostate. The most difficult cases of all to deal with were those in which the urethra was compressed by an upgrowth from its floor. After making a supra-pubic opening, the portion of prostate extending into the bladder might be, in some cases, successfully treated without removal by touching it with the galvano-cautery or with Pacquelin's instrument. He held that twisting out portions of prostate courted hæmorrhage, but that if the growth were got away by degrees, and the base touched with the cautery, not much blood need be lost.

Mr. SWINFORD EDWARDS, after discussing the connexion between sexual exercise and prostatic hypertrophy, remarked that the electric light was not a success as an aid to diagnosis. For this purpose he preferred a short-beaked sound with a finger in the rectum, which would often enable one to determine the kind of enlargement present. He had known the hypertrophy to be present before the age of fifty. If a pedunculated ingrowth were diagnosed, the sooner it were removed the better, and he thought that it was unwise to wait for the changes associated with catheter life. No attempt should be made to remove a "collar" by supra-pubic prostatectomy.

Mr. SHEILD asked whether silver catheters should be used at all in prostatic cases. He regarded them as dangerous instruments, especially if used on the first occasion when a catheter was required. The prostate varied much as to its vascular condition and was apt to be much engorged when a stone was present. Very severe hæmorrhage followed in the only two cases of prostatectomy he had witnessed. Everything depended on a proper selection of cases. Bad subjects were old and fat men, especially those with bronchitis and emphysema and those with kidney trouble, whether that were indicated by the presence of albuminuria or by the passage of an excessive quantity of urine with a low percentage of urea.

Mr. BUCKSTON BROWNE, in reply, said that many cases were on record where portions of the prostate had been removed by the forceps while extracting a stone, but these, as a rule, had not been followed by restoration of the powers of micturition, because the prostatic removal had not been complete. He had seen cases where there had been trouble from perineal fistula. Of the rubber catheter he would say that if it passed at all a child could do it, but that if it would not go easily the best surgeon would not be able to make it do so. Two pockets were often formed, one on each side of the veru montanum, and these often acted as a bar to soft instruments and might in a few cases necessitate the use of a silver one. With regard to the presence of kidney disease, it should be remembered that the cases were often desperate ones, not permitting of selection. In the perineal operation the cut must to a certain extent be in the dark, and he had seen severe hæmorrhage follow this method.

PATHOLOGICAL SOCIETY OF LONDON.

Survey of Recent Work bearing on the Pathology of Cancer and Sarcoma.

AN ordinary meeting of this Society was held on March 7th, the President, Sir George Humphry, in the chair.

The debate on the Pathology of Cancer and Sarcoma was resumed by Mr. RUBERT BOYCE, who detailed the results of researches on cell inclusions in cancer which had been made by himself and Dr. Arthur Giles. He showed micro-photographs illustrating some phases of cancer bodies which they had recently met with in a case of carcinoma of the pancreas. The sections were all equally and highly magnified; they were hardened in alcohol and stained with logwood. As Dr. Galloway hinted at the last meeting, in his clear summary of his own broad views, they were inclined, from want of stronger evidence, to believe that many of the parasitic bodies so recently described in cancer cells were not parasitic, but of the nature of endogenous cells. Whilst the processes of cell invagination and of nuclear and cell-plasma degeneration had been discussed by those holding the parasitic view, endogenous cell formation had been briefly dismissed or left out of account; yet this process was the one *par excellence* which must be sharply differentiated from parasitic enclosures, for the endogenous cell and the parasite were alike nucleated protoplasmic masses, and the unicellular parasites of certain mollusca, as well as those found occasionally in the alimentary tract and lungs of man, showed how very difficult it was to distinguish between the parasites and certain cells of the host. The confounding of the two in the past had led to curious mistakes upon both sides—notably, on the one hand, in the mistaking of the parasites of the blood-corpuscles of the frog for active phenomena of the protoplasm of the corpuscles themselves; and, on the other hand, in regarding certain nuclear forms as parasites. Arnold, who had done for pathological mitosis what Flemming did for the normal process, described and figured endogenous cell formation in the giant cells of marrow, of tuberculous glands and of neoplasms. A glance at his figures showed how closely this phenomenon resembled the appearances of parasitism as described by recent observers. Recently a paper had appeared from Arnold's laboratory by Müller, in which the parasites described by Drs. Ruffer and Walker are regarded as typical examples of endogenous cell formation. Müller's figures agreed with the photographs they were showing and they thought that they were correct in saying that both were identical with the appearances described and figured by Drs. Ruffer and Walker, Dr. Galloway, Mr. Clarke and others. Their preparations showed:—1. That the cell enclosures were met with in abnormal cells. They were giant forms; there was very often more than one nucleus; there was the very marked hyperchromatosis so characteristic of many forms (especially giant forms) of sarcoma and carcinoma cells. There were evident signs in many of the giant cells of dropsy of the plasma. This dropsical condition was represented by a loose reticulation of the cell substance or by the formation of groups of vacuoles. These observations accorded with those of Müller. 2. That the cell enclosures were single or multiple, and that they usually commenced in or near the nucleus or that they occupied the place of the nucleus. These observations agreed with those of Arnold, in which the nucleus of the included cell was often connected by fine chromatin strands with the mother nucleus. 3. That the enclosures consisted either of little else than chromatin granules or of a nucleus and protoplasm. That the chromatin of the enclosed cells might be broken up into several pieces or may appear as if about to divide. The chromatin might be separated by an enclosing vacuole from the rest of the cell, and often stained just like the nucleolus of the mother nucleus. 4. That there was a capsule which was regarded by Dr. Ruffer as formed by the cancer cell itself. Dr. Galloway observed that it might be radially striated and they had met with one very marked example of this. They called attention to a highly important and little known observation of Flemming's—namely, that the capsule of the fat cell was highly differentiated and might give a distinct staining reaction. With regard to the explanation of the thickened and striated capsules, perhaps some information might be obtained from Stilling's observation upon the encapsuled endogenous bodies found in the prostate. 5. That the capsule expanded, either by the growth of the enclosed body or by the accumulation of fluid. Capsules might, in fact, contain perfect cell enclosures, large or small granular masses (spore-like bodies), fine granular débris, or only fluid. They had found all connecting stages of these conditions. 6. That when several capsules were formed in the same cell or in close proximity a mulberry mass resulted comparable to the mulberry fat cells (derived from one cell) of certain of the lower animals. The partitions might, however, rupture and fusion occur. 7. That capsules were met with enclosing more than one nucleated body. There might be two or more perfectly formed cells, or, on the other hand, very degenerate masses. These groups appeared to them a most suggestive feature from the point of view of parasitism. 8. That there was not the least trace of irritation or leucocytic reaction in the neighbourhood of the cell enclosures, and that the cancer cells in these parts did not show any greater signs of activity than elsewhere. From the above facts they did not feel justified in concluding that these bodies were parasites, and the great variety of appearances described by different observers seemed to them rather to favour the non-parasitic view. Mr. Boyce and Dr. Giles were of opinion that Mr. Clarke brought forward to the Society no evidence whatever to show that "both cancer and sarcoma were caused by the parasites in the same sense that tubercle was caused by the tubercle bacilli." Cancer gave rise to metastasis, but the secondary foci, unlike tubercle and the infective processes generally, were grafts of the original focus, which did not, in so far as we at present knew, confer their malignancy or their infectivity on the tissues around. Mr. Clarke and Dr. Galloway admitted as parasites free nucleated bodies, described as amœboid by Mr. Clarke, in the intercellular spaces. Dr. Ruffer and others, on the other hand, restricted the term "parasite" to encapsuled cell enclosures. From the analogy of parasites in the lower animals the one view had at least as much in its favour as the other. Cancer bodies had been freely compared with and called "sporozoa"; they would, however, call attention to the following points, in which cancer bodies and sporozoa were in marked contrast: 1. The intracellular sporozoa (sarcosporidia) seemed to be of a harmless nature, not causing inconvenience to their host (Bütschli), but rather living on terms of symbiosis, which is well illustrated in the paramœcium, where it might be even hereditary; but, to quote Dr. Ruffer, "the life of the parasites in the cancer cells is a precarious one," whilst "they cause their hosts to perish." 2. Sarcosporidia were nearly always large and visible to the naked eye. 3. The cystic, or resting, stage of sporozoa was the only one represented at all definitely among cancer bodies. They never saw the active amœboid stage, pseudopodia or ciliated forms, as seen in Coccidia and Klossia. 4. The numerous round lenticular or falciform spores, so characteristic of sporozoa, were never seen in cancer. 5. The bodies which had been compared to spores were clear, like fat globules, and of unequal size. Spores of sarcosporidia were invariably of uniform size and generally granular. 6. The spores of gregarinidæ always had a silicious or chitinous capsule. To conclude, they must still agree with what Virchow said eighteen years ago and which he had recently repeated—namely, that as no previous and no subsequent stages of these bodies could be traced, therefore there was not sufficient evidence as yet in support of their parasitic nature.

Mr. D'ARCY POWER showed some photographs of cells of squamous epithelium taken from a rat in which a wound had been made and artificial irritation had been kept up for some time. The cells were much larger than the ordinary run of epithelial cells and they showed appearances which simulated those found in carcinoma.

Dr. WOODHEAD said that he felt somewhat disappointed that it had not been possible to adhere to the original pro-

gramme sketched at a former meeting of the Society. He felt that for several reasons it would have been more satisfactory had the sets of specimens (that formed the texts for the remarks of the various exponents of different views) been submitted to the Morbid Growths Committee. There had been demonstrated before the Society, and not of course under the most advantageous conditions, specimens on which those who were interested in the matters at issue were asked to express a definite, if not a final, opinion. For himself, he had to thank Mr. Jackson Clarke for putting his specimens and time at his (Dr. Woodhead's) disposal in order that he might have a clearer idea of what Mr. Clarke's views were and how they were supported by the specimens he had prepared and demonstrated. He thought Mr. Clarke's assertion that Russell's bodies were nothing but the result of degenerative changes was far too sweeping. It was undoubtedly the case that Russell had not differentiated sufficiently between the structures he had stained and described, some of which, no doubt, were the parasitic organisms described by Soudakewitch, Ruffer, Walker and others, although others were nothing more than altered, degenerated cells and in some cases red blood-corpuscles; but Russell undoubtedly had recognised as parasitic certain structures which, in this country at any rate, had previously been passed over or their importance and characteristic structure neglected. He himself had not fully recognised how much of accuracy there was in Russell's work, nor probably had Russell himself until the appearance of Soudakewitch's paper, followed so rapidly by the exquisitely demonstrative preparations of Ruffer and Walker. Mr. Clarke told them that Malassez, who after Thôma was one of the first to take up the subject, was not fully convinced until he had seen Darier's work, and it was possible that many of the members of this Pathological Society were in a similar state of mind (some might still remain in that condition) until they had seen the beautiful specimens demonstrated by Drs. Ruffer and Plimmer at the last meeting. It had been remarked that pretty specimens were all very well, but that, after all, structural detail was the main thing to be sought in any histological specimen. He should be the last to contradict such a dictum, but he might add that, without very perfect fixing and hardening and accurate differential staining methods, by which alone pretty specimens could be ensured, no good detail could be brought out, and it was only as our methods had become perfected to their present condition that our recent more accurate knowledge of cell and nuclear structure had been obtained. The very fact, however, that we now often saw appearances with which we had hitherto been unfamiliar was a too frequent source of error, as a result of which nuclear structures or various degenerative changes had often been mistaken for parasitic structures; whilst, on the other hand, he had a not very limited experience of an equally common mistake—the confounding of parasites imperfectly fixed and stained with nuclei. Now this was important; for several observers, who for long were unable to satisfy themselves that they had seen one of these parasites, on going over their specimens again—he himself had been in this position, so he felt he could speak with more certainty—were satisfied that parasites were undoubtedly present. All this must be carefully borne in mind in dealing with this question. The other morning he had received a note and a paper from Mr. Gustav Mann, assistant to the Professor of Physiology in the University of Edinburgh, certainly an expert in the preparation of histological specimens, both vegetable and animal, who pointed out that he had been able to demonstrate in many of his specimens nuclei which he could not distinguish from the parasitic protozoa of the epithelial cells of cancer as described by Drs. Ruffer, Walker and Galloway. The nuclei, as figured by him, were certainly very like those protozoa with the appearances of which we are now familiar; but on comparing the two sets of structures it would be seen that there were essential points of difference as regarded their relation both to the cell protoplasm and to structures which could be recognised as ordinary nuclei. Of course it had been objected that the radiating streak in the parasitic bodies was not peculiar to them, and certainly anyone who had carefully examined the lines radiating from the nucleus of an epithelial cell of the cuticle as a centre through and beyond the protoplasm to form the prickles with which every histologist was familiar would accept this statement as accurate; but he would reserve to himself the right of arguing that in the organised parasitic cell there must be several features which it had in common with other animal cells, though they were built up into a highly organised organ or tissue. We must expect to find certain points of similarity, otherwise we should not be justified in looking upon the parasite as an animal cell, or perhaps even as a living cell at all. We could not insist too strongly, then, that now we had such good histological methods at command we must not be satisfied with impressionist pictures or specimens which showed not what might actually be brought out, but what the investigator might feel compelled to read into them. As an example of what was too commonly accepted, the case of molluscum contagiosum might be instanced. Parasites had been described as present in this condition, and no doubt in many cases there were bodies which had not previously been described; but he for one had never been able to convince himself that the so-called parasites were not epithelial cells, in which certain changes, degenerative, no doubt, had taken place. Mr. Clarke had referred to Sjöbering's illustrations, which by many workers had been described as too diagrammatic—a criticism which at one time he would have willingly endorsed; but now he should be very careful indeed in making such a comment, as, after seeing the various specimens recently prepared and demonstrated by Dr. Ruffer and Mr. Plimmer, he was prepared for much in the way of diagrammatic specimens. It would scarcely be necessary for him to repeat what had already been said concerning the pseudo-parasites, included and degenerated cells, irregular mitoses and the like, but he did wish to point out that when he spoke of these parasites more than a year ago he was wishing to draw attention to the analogous process in the liver of the rabbit and the kidney of the snail, and in describing the parasites as coccidial he wished to draw attention to the process rather than to the specific and definite form of the parasite, which, as it had only just had special attention drawn to it, was still undescribed in detail; and not only were the methods of development and reproduction still unknown, but its very structure was as yet imperfectly made out. It was, he confessed, somewhat rash to draw an analogy which should only have been suggested. He could not accept it as yet proved that we knew anything about the mode of reproduction or method of action of these parasites, and after a careful examination of some of Mr. Clarke's specimens under the favourable conditions afforded by Mr. Clarke's kindness he was still unable to accept his conclusions. In the first place—and he was sure both Mr. Clarke and the members of the Society would accept his criticism in the spirit in which it was offered—he had not been able to make anything out in these specimens for which some other explanation than that they were parasites could not be offered. For instance, he believed that what Mr. Clarke described and demonstrated as ripe psorosperms—using that term as Mr. Clarke himself used it—in an epithelioma were what had already been described by numerous observers, but which, so far as his experience would allow him to speak, were merely included and degenerated cells—an explanation of all "parasitic" bodies offered by Welch. As to the ripe "psorosperms" in connexion with sarcoma of the femur shown at the last meeting, he had again to join issue with Mr. Clarke; the plasmodial form described by him was a plasmodium, but it was of that kind known as the giant-cell of the myeloid sarcoma, which so frequently contained not only blood pigment, but also red blood-corpuscles in various stages of degeneration; the larger size on which such stress was laid being the result of the degenerative changes that ensued on the death of the corpuscle. He himself had described these swollen red blood-corpuscles some twelve years ago. Again, in another sarcoma in which Mr. Jackson Clarke described masses of ripe psorosperms, he believed that these were simply areas of degenerated sarcoma tissue—such areas as were common in every sarcoma, especially when hæmorrhages were scattered through them. The "spores" that were found near these areas, and also in the neighbourhood of the degenerating epithelial cells in the epithelioma, could not, to his mind, be in any feature different from leucocytes of various forms such as were invariably found in the region of devitalised tissues. It would, in any case, be necessary to bring forward much more evidence than had up to the present been offered to induce most histologists to accept them as spores of sporozoa rather than as phagocytic leucocytes. It would not do for us to argue from the general to the special in this matter, and it was certainly most dangerous for us to say that the parasite which we assumed set up the cancerous proliferation resembled, as regarded life history, methods of multiplication, structure and function, those found by Mr. Clarke in the ureter or those described by other observers in the kidney of the snail or the liver of the rabbit. These two latter differed in most marked features and essential details from one another, and

we should expect that the parasites in other positions might present equally distinctive characters. Whoever had right on his side in this matter, it must be recognised that the protozoa described by Dr. Ruffer and Dr. Galloway and their colleagues were essentially different from those described by Mr. Clarke. Much valuable work on the parasitic origin of cancer had been brought before the Society. In 1877 Messrs. Ballance and Shattock indicated the nature of what they thought might be the *causa causans* of the conversion of benign into malignant epithelial cells, and, so far, their indications appeared to have been correct. Then, in turn, Russell, Bowlby and Hutchinson, Delépine, and D'Arcy Power (members of this Society) had all contributed to our knowledge, and, lastly, came this interesting discussion. He was yet far from convinced that Mr. Clarke had right on his side. His senses would not go along with him in that direction, although Mr. Clarke's specimens that evening were infinitely better demonstrated than they had been on any previous occasion. It might be that the speaker was more familiar with the parasites described by Dr. Ruffer and others, but in these there was something which he could grasp and follow out, whilst, on the other hand, he felt that satisfactory explanations, other than that the bodies described were parasitic, might be offered of all the appearances Mr. Clarke had set before them.

Mr. BALLANCE exhibited for Mr. Shattock and himself micro-photographs showing certain appearances observed by them in Incubated Scirrhus of the Breast. In May, 1888, Mr. Shattock and he read a paper before the Society on the same subject and they had lately repeated the observations. The appearances consisted in budding of the chromatin of certain elements in the tissue, and though seen apart from incubation they were especially evident after it. Their present experiments consisted in incubating portions of scirrhus for different periods in sterilised milk and glycerine at the room temperature. After a few days the nuclei of the epithelial cells ceased to take nuclear stains, but there remained certain elements which stained intensely with logwood, and green with Biondi's reagent, in this resembling nuclear chromatin. The elements were surrounded by an unstained envelope, and the stained centre underwent a process of fission and budding, whilst after six weeks' incubation the section was remarkably full of them. Whatever their nature, they clearly underwent multiplication after the death of the other elements. Professor Sherrington had made the observation that in potassium oxalate the white blood-corpuscles would remain alive for certainly twenty-four days. Whether the bodies in question were leucocytes or some form of connective-tissue cell, or whether they were parasitic in nature the authors at present left for further observations. In their previous paper they had suggested a comparison between the extrusion of nuclear chromatin in carcinoma and the extrusion of the polar bodies preparatory to fertilisation of the ovum and of the seminal granules from the spermatozoa, each form of cell being originally, as Balfour had suggested, hermaphrodite; and they had also conceived of a hypothetical protozoon in some way conjugating with the tissue cells. Stricker had advanced the idea of sexual differences in the body cells, and more lately Auerbach had endeavoured to show that the cyanophile component of nuclear substance was male and the erythrophile female, for in osseous fishes and batrachia the ova took the red stain, the head of the spermatozoon the blue. In sections of carcinoma they had seen bodies containing a red and a green nucleus under Biondi's reagent, the red corresponding in general appearance with the nucleus of the body described by Soudakewich and Drs. Ruffer and Walker. Dr. Ruffer had also figured the nucleus of the parasite as blue, though this was exceptional. It remained for investigation whether a sexual process of some kind did not obtain either in the parasite itself or between the parasite and tissue cells. Whether the multiplying bodies the authors had found in incubated scirrhus were in any way related to the parasite, as this was described by Soudakewich, Dr. Ruffer and others, they were at present unable to say.

(To be continued.)

OTHER METROPOLITAN MEDICAL SOCIETIES.

EPIDEMIOLOGICAL SOCIETY.—A meeting of this Society was held on Feb. 15th, Dr. J. F. Payne, President, in the chair.—Mr. R. D. R. SWEETING read a paper on Post-Scarlatinal Diphtheria. He said that an analysis of the reports of the fever hospitals of the Metropolitan Asylums Board for the four years 1884–87, before cases of diphtheria were received, and for the four years 1889–92, after this disease was admitted, showed that during the latter period the incidence of post-scarlatinal diphtheria had enormously increased, and that it had become terribly fatal. The incidence had been greatest at the Western Hospital and least at the North-Western Hospital. At the former, owing to the extent to which the drafting away of convalescents had been carried out, the aggregation of acute cases, alike of scarlet fever and of diphtheria, had been greatest, the North-Western Hospital presenting the reverse conditions in every respect. There could then be little doubt as to the connexion between post-scarlatinal diphtheria and aggregation of acute cases. At the Northern Convalescent Hospital the incidence of post-scarlatinal diphtheria had been pretty uniform during the whole period of its existence—viz., 1887–92—the admission of primary diphtheria in 1889 having apparently made but little difference. It was remarkable that this complication usually occurred at a late period of convalescence, in more than half the cases after the lapse of four weeks from admission. The monthly prevalence, the age incidence and fatality all showed that the disease was true diphtheria and not a mere phase of scarlet fever. Post-scarlatinal diphtheria had begun to appear at the new convalescent camp at Gore Farm, although no cases of simple diphtheria were received there. In analysing the cases at the several hospitals it was found that very few could be explained by infection from outside or by concurrent incubation, or by personal infection from cases already in the wards; nor could the condition of the wards or defects of drainage or of ventilation be adduced as causes. It did not appear to be attributable to faults of administration, though from the absence of complete separation of the medical staff these could not be altogether excluded. He suggested that possibly under the influence of aggregation the poisons of scarlet fever and diphtheria acquired an altered character and increase of potency, rendering them more diffusible or perhaps even transmittible; in other words that, the line of demarcation between the two being feebly marked, the efficient cause or specific poison of scarlet fever must under certain environments be transmuted into that of diphtheria.—Dr. WILLOUGHBY said that under the circumstances there could be no doubt that the disease in question was true diphtheria and not a mere complication of scarlet fever; but, though a believer in evolution in the remote past, he was loth to admit transmutation and would rather compare the apparent *de novo* origin of these cases with that of erysipelas. Both were facultative parasites or, as he preferred calling them, extra-corporeal contagia, widely diffused and only needing for their development a suitable soil, which diphtheria found to perfection in the post-scarlatinal throat.—Dr. THORNE THORNE, whilst fully recognising the receptivity of such throats to the poison of diphtheria, as Dr. Greswell had so forcibly shown, doubted the ubiquity, as Dr. Willoughby had expressed it, of the diphtheritic microbe; for during seventeen years out of twenty, during which over 6000 cases of scarlet fever had been treated in the London Fever Hospital, there had been none of diphtheria; and at St. Thomas's Hospital, where 383 cases of diphtheria and 134 of scarlet fever had been treated in the same pavilion but in absolutely isolated wards, there had been only one instance of diphtheria in a fever patient. He believed errors in administration to be the whole explanation.—Dr. CAIGER said that he thought it rather a question of environment and weather conditions, for at the South-Western Hospital they had had no cases amongst 2000 cases of scarlet fever in 1891 and only eighteen in 1892 under still greater pressure; but there had been a good deal at Winchmore Hill as well as at Gore Farm, no diphtheria cases being received at either place.—Dr. MCCOMBIE defended the administration of the hospitals, observing that few children were admitted into the London Fever Hospital and that the mortality in post-scarlatinal measles also was very high. He doubted the great influence ascribed to aggregation and had admitted cases of post-scarlatinal diphtheria which had been developed in the home.—Dr. HOPWOOD stated that on each of the two occasions in which post-scarlatinal diphtheria had broken out in the London Fever Hospital serious defects in the drains had been detected, the disease disappearing as soon as these were remedied.—Dr. MATTHEWS considered that the site and surroundings were the most efficient factors, adducing the case of Gore Farm, where no diphtheria, as such, was ad-

mitted, but where in the male block, situated on a dry soil, one case in seventy-five, and in that for females, on a damp and lower site, one in twenty-eight had been attacked.—Mr. Shirley Murphy, Dr. Goodall and Dr. K. McLeod having also taken part in the discussion, Mr. Sweeting replied.

HARVEIAN SOCIETY.—The meeting on Feb. 16th was devoted to the exhibition of specimens, Mr. Malcolm Morris, President, in the chair.—The PRESIDENT showed a case of Pityriasis Rubra in a woman aged twenty-six who came under his care ten months ago with a general eczema. She was admitted to St. Mary's Hospital, and whilst under treatment the present condition developed. There was considerable desquamation, and the hair and nails came out. This was accompanied by pyrexia and an extremely rapid pulse; the legs became œdematous; anorexia and sleeplessness were prominent; there was no albuminuria. At present the hair of the head is about four inches long and the nails have grown. There is still some desquamation and the whole surface is red; there is no pyrexia. The constitutional symptoms have all abated and there is general improvement. The President also showed a case of Lupus Erythematosus in a girl who had been under his care for fourteen months. She was treated with internal remedies for six months with no effect; external remedies were afterwards tried with considerable benefit. He pointed out how difficult some varieties of this disease were to cure from the depth to which the sebaceous glands were implicated.—Mr. ROUGHTON showed a patient who, when vaulting the table from the "storming board" in a gymnasium, alighted on the edge of the mat, twisting his foot inwards. The leader of the gymnasium "put his foot back," and the patient was then brought to the Royal Free Hospital. Fracture of the astragalus was suspected, probably through the external part of the head.—Mr. ATWOOD THORNE showed a case of Consolidated Aneurysm in a man aged forty-six, a plasterer, who was admitted into St. Mary's Hospital, under the care of Mr. Silcock, on Dec. 20th, 1892. There was then a large pulsating tumour to be felt on the right side above the outer two-thirds of the clavicle, below the clavicle for the same distance, and in the axilla. There was also dulness in the outer part of the upper two intercostal spaces. The right radial pulse was somewhat delayed, was fuller and more compressible than the left. As the case was considered to be one of aneurysm of the axillary and the third part of the subclavian arteries, an attempt was made to ligature the first or second part of the subclavian. However, on dissecting down to the artery above the clavicle the first part of the subclavian was found to be affected, the artery here being about an inch and a half in diameter. The idea of ligaturing the artery was consequently abandoned and the wound closed. On removing the dressings two days later the wound was found to be septic. The pulsation in the subclavian and axillary regions diminished day by day and the pulse at the wrist was gradually lost. Mr. Thorne then demonstrated the case. The wound was quite closed. There was slight pulsation in the parts previously affected, no pulsation in the radial and very slight pulsation in the ulnar at the wrist. An opinion was expressed that the septic change in the wound had some influence in the alteration of the aneurysm.—Dr. BOXALL showed a patient aged forty-one who had a well-defined hard mobile swelling in the right ovarian region. By internal examination the growth was found to spring by a short pedicle from the right side of the fundus; the uterus itself was in the normal position and was not enlarged, the sound passing barely three inches in the normal direction. She had one child, at the eighth month, three years and a quarter ago, and whilst carrying had noticed an unusual swelling in the abdomen. At the time of delivery the growth was of such a size that her medical attendant at first thought there might be another child, and after consultation expressed the opinion that she would be dead in eighteen months if it were not operated upon. She has been under observation as an out-patient at the Middlesex Hospital since six weeks after delivery, and from that time to this has never experienced the slightest inconvenience from the presence of the tumour. The points to which particular attention was directed are: (1) the variation and, on the whole, diminution in the size of the tumour (to the extent of one inch both in the longest and shortest measurements), though no active treatment has been pursued; (2) the possibility that a tumour of this size (fœtal head) might slip into the pelvis, there become impacted and give rise to urgent pressure symptoms. This is here prevented by the short attachment to the fundus and by the fact that the uterus maintains its normal position and acts as an efficient support. Comment was made upon the difficulty of distinguishing at the time of delivery such a tumour from an ovarian cyst.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—A meeting of this Society was held on Feb. 20th, Mr. Shirley F. Murphy, President, in the chair.—Dr. REGINALD DUDFIELD read a paper on the Sanitary Certification of Houses, as practised by the local authority at Eastbourne, and, so far as he knew, at no other town except Teignmouth, comparing the requirements with the recommendations of the model by-laws of the Local Government Board, THE LANCET Commission of last year and Dr. Farquharson's Bill, all of which came short of these in stringency. The connexion of the drains of new houses with the older ones was made by the workmen in the employment of the corporation directed by the borough engineer, for house drains &c. the building surveyor was responsible, whilst the medical officer of health and his inspectors took cognisance of all old—i. e., existing—buildings. This division of labour worked well; and the system of inspection, registration and certification had grown up by degrees and was still being improved. The certificates were issued only in respect of hotels and lodging- and private houses rented at £50 and upwards, and amongst the conditions insisted on were the interception and ventilation of the drains, disconnexion of waste and rain-water pipes, ventilation and anti-syphoning of soil pipes, separate water service for w.c.'s, pan closets being prohibited, and the testing of all drains and soil pipes, the former by water, but without artificial head or pressure, the latter by driven smoke. The minimum fall of house drains allowed was 1½ in 10. This was, he remarked, unusually great, but, on the other hand, the only water-pressure applied was that to which the pipes would be actually subjected—viz., that of the gulleys themselves. A register was kept of all arrangements and tests applied to them, and the certificate, which testified to the condition at the date of inspection only, was valid for one year. New houses were certified when finished if desired; old ones only on application from owner or occupier, and after the drains had been opened up, tested and, if found defective, relaid throughout. He hoped to institute a system of periodical reinspection before long, but already the favour with which certified houses were regarded by visitors and even the opposition at first made by house agents and some owners were evidence of the advantages accruing therefrom. The expense rarely devolved on the tenant, and very often notices for the "abatement of nuisances" were followed by requests for certification, thus ensuring the thoroughness of the work done. He was strongly of opinion that the sanitary authority should alone grant certificates and not accept them from irresponsible persons, as under Dr. Farquharson's Bill, which would, he believed, prove a failure.—Professor CORFIELD feared that should such a practice as that described by Dr. Dudfield become general, the authorities would be exposed to actions at law if, in the event of typhoid fever occurring in a certified house, an expert should be able to discover any defect in a drain, and Mr. Keith Young was of the same opinion, though fully appreciating the value of the register to persons seeking houses.—Dr. L. PARKES thought that the system, though excellent in itself and adapted to places like Eastbourne, could not be extended to London and similar large towns, but felt that the site, ventilation &c. should also be taken into account.—Drs. GIBBON, KENWOOD and WILLOUGHBY discussed the ventilation and testing of drains, and Dr. DUDFIELD, replying to Dr. Corfield, pointed out that the certificate guaranteed the soundness of the drains at the time of inspection only, so that no action could lie for anything that might occur subsequently.

PROVINCIAL MEDICAL SOCIETIES.

PLYMOUTH MEDICAL SOCIETY.—At a meeting held on Feb. 18th, under the presidency of Mr. Leah (Stonehouse), Mr. F. EVERARD ROW read a paper in which he reviewed the Common Objects of the Hospital Ward, commencing with varicocele. Treatment of this condition was advocated by the excision of a portion of the veins between ligatures, with subsequent shortening of the cord. For varicose veins Mr. Row recommended ligation of the vein at several points, and for hæmorrhoids considered the ligature equal to other methods. Spasmodic and fibrous strictures of the male urethra and the subject of radical cure of hernia,

acquired and congenital, were discussed, preference for Mitchell-Banks method in the latter cases being expressed. The flap-splitting operation for ruptured perineum was advocated. A consideration of the use of drainage-tubes concluded this eminently practical paper, in the discussion following which Messrs. Jackson, Bulteel, Woollcombe and Swain joined.—A clinical evening was held on March 1st, at which Dr. FOX showed a case of Diabetes with marked Choroiditis.—Mr. WOOLLCOMBE brought forward a man aged fifty-four with Paralysis of the Right Arm due to Lead Poisoning and left facial paralysis of uncertain causation, which was now improving; the patient also had an exostosis growing from the humerus near the musculo-spiral nerve. Mr. Woollcombe also exhibited for Mr. Lucy a boy aged four wearing a boot made by a local bootmaker, also the subject of Syme's amputation. Mr. Woollcombe demonstrated a uterus with a large fibroid mass attached removed by hysterectomy. During operation the thinned and drawn-up bladder was twice opened and sutured, and an excellent recovery resulted.—Dr. WILLOUGHBY showed a Carneous Mole passed during the eighth week of pregnancy.—Mr. ROW showed a Pocket Midwifery Case made from his designs by Messrs. Allen and Hanburys.—Mr. WHITEFORD exhibited a photo of a Urine-testing Table designed by Mr. R. Stanley Thomas, and now in use in the wards of the South Devon Hospital.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—At the meeting on Feb. 23rd, the PRESIDENT (Mr. Simeon Snell) introduced two cases of Hemianopia—both men. In one there was word blindness also; in the other, right lateral hemianopia was followed by loss of sight on the remaining half of the retina, with the exception of a small area on the left side of the fixation point. Mr. Snell remarked on the pupil reaction in these cases, and said that in the first case, where the lesion was a cortical one, the pupil responded to light, whilst in the second the "inaction" was demonstrated in all parts of the retina except over the central part, which was intact, and where the pupil acted to light thrown upon it. This would indicate that the lesion was on the peripheral side of the corpora quadrigemina.—Mr. DALE JAMES showed a case of Exfoliative Dermatitis. The disease began as seborrhœic eczema when the patient, now aged ten years, was three months old. The case illustrated the change of type that frequently takes place in very chronic eczema, and also Unna's contention, that general exfoliative dermatitis is commonly derived from seborrhœa of the scalp.—Dr. GEORGE WILKINSON showed for Dr. CLAPHAM two cases from the Sheffield Public Hospital. They were sisters and had worked with lead. Both were affected with rapid clonic spasms on rising to the erect posture, on walking and also to a certain extent on performing other movements. The knee-jerks were exaggerated, there was a peculiar affection of speech, a dull mental condition and all actions were done very deliberately. The diagnosis of the cases between saltatorial spasm, myoclonus multiplex, insular sclerosis and hysteria was discussed.—Mr. GARRARD showed 1 oz. of Water removed by litholapaxy and a Uric-acid Calculus $2\frac{1}{2} \times 2 \times 1\frac{1}{4}$ in. and $3\frac{1}{2}$ oz. in weight removed by supra-pubic lithotomy.—Mr. FRANK HARRISON showed an extensive collection of Dental anomalies.—Drs. Ruxton and Adair showed several Brains prepared by Giacomini's process illustrating cerebral softening, internal hydrocephalus, general paralysis of the insane &c. They also showed microscopic specimens of nuclear vacuolation of the cells of the second layer of the cerebral cortex from cases of epilepsy, spider cells from cases of alcoholic insanity, fuscous degeneration of nerve cells, and slides illustrating the existence of marked changes in the peripheral nerves of cases of general paralysis of the insane. All the specimens were described, and the microscopic ones were illustrated by photo-micrographs.

LONDON SANITARY PROTECTION ASSOCIATION.—Dr. Bristowe presided on Monday last at the twelfth annual meeting of this Society, when the report of the Council for the past year was read. A very favourable account was given of the work accomplished, 535 houses having been visited, of which 68 per cent. were adjudged to be in a more or less bad condition. Amongst the buildings inspected were sixteen hospitals, schools or other public institutions. In view of the probability of the Association sharing in the Berridge legacy, it has been proposed to render the twelve years' experience derived from the operations of the Society available by means of lectures, publications &c.

Reviews and Notices of Books.

The Hygiene, Diseases, and Mortality of Occupations. By J. T. ARLIDGE, M.D. London: Percival and Co. 1892.

THIS valuable work by Dr. Arlidge is an expansion of his Milroy Lectures delivered in 1889 at the Royal College of Physicians. We owe the author an apology for having so long delayed any notice of this book, a delay which was caused by unforeseen circumstances and in no way attributable to any want of appreciation of its great value. Social questions rightly occupy a large amount of public attention at the present time, and in order that we may arrive at just conclusions concerning the many social problems with which legislators and public men are constantly confronted the first thing necessary is exact information. The excellent work of Mr. Charles Booth on the "Life and Labour of the People" has put us in possession of a large number of facts which are indispensable for those who wish to arrive at any just appreciation of the conditions of life which have to be encountered by different classes of the community, and the work which is the subject of the present notice is in many ways complementary to that of Mr. Booth and supplies statistical and scientific matter which serves to complete our view of many social problems. Dr. Arlidge's work should be welcomed by legislators and philanthropists as well as by the members of the medical profession, whose duty it is to be specially acquainted with those causes which affect the health of the different sections of the industrial community. Dr. Arlidge is no mere statistician, nor is he merely a compiler of facts collected by others. He has opinions of his own—opinions formed during a long and honourable professional career which has given him singular opportunities of becoming practically acquainted with the subjects of which he treats. The influence of machinery on the health of the people is thus alluded to on p. 25:—

"The expansion of manufacture by the agency of machinery is the most remarkable feature of the present age, and every year the simple handicrafts are reduced in number and profoundly modified in character. It leads to the extension of associated labour in factories and to an astonishing subdivision of work. One result of this latter circumstance is an increased monotony of occupations. In the boot and shoe trade, for instance, whilst the machines in use deliver the workman from the cramped and unhealthy position enforced upon his forefathers and from the chest pressure caused by the 'last,' they deprive him of whatever satisfaction might be felt in making and turning out entire a boot or shoe and cause him to expend his technical ability in dreary monotony, on making only one portion or in stitching two parts together ..... In fact, it may truly be said of machinery that it reduces those who use it to the position of a part of itself. The man is transformed, in a greater or less degree, into an accessory machine, and even in this humble position his utility is perpetually encroached upon by the invention of new automatic movements. ..... And, generally speaking, it may be asserted of machinery that it calls for little or no brain exertion on the part of those connected with its operations; it arouses no interest and is wearisome by monotony. Machinery, consequently, has nothing in it to quicken or brighten the intelligence, though it may sharpen the sense of sight and stimulate muscular activity in some one limited direction."

There are some pertinent remarks on the fashion of the present day to seek "genteel" employment in preference to handicrafts and to regard hard manual work as less noble than those feeble manual employments which necessitate the use of the pen, although it must be admitted that the carpenter who really produces some household appliance or piece of furniture really makes more use of his intelligence than the man who sits all day upon a stool laboriously copying at so much a folio.

"The teaching of statistics," says Dr. Arlidge, "is that trades requiring strong and those demanding moderate

exertion are far and away more healthy than others demanding little or no bodily effort. And all this is in harmony with what physiology proves—that the exercise of organs, and especially of the muscular system, is a pre-requisite to health and preservative of life."

As a necessary corollary to the above, Dr. Arlidge gives it as his opinion that if there is to be any interference with the hours of labour it is not the more laborious and more healthful employments which should be first considered, but rather those industries which necessitate unwholesome work indoors, and which really deprive the artisan of what our author rightly styles the pre-requisite of health.

The fourth chapter of this book is devoted to a classification of employments, non-traders, traders, artisans &c., with their subdivisions, and the reader who wishes for information as to the diseases which are especially prevalent in any class of the community will here be provided with a storehouse of facts which have been collected with equal industry and judgment. Chapter five deals with the Pathology of Dust Inhalation, and the various employments which necessitate the inhalation of dust or noxious vapours are here passed in review. The amount of information contained in these last two sections of the work is very great indeed, and there is scarcely an industry, certainly no industry of any importance, of which the chief facts connected with its processes, and especially the injurious parts of such processes, are not given. These portions of the work do not lend themselves to quotation in a review, and it only remains for us to say that, having gone carefully through the book, we can confidently recommend it as a valuable work of reference to all who are interested in the welfare of the industrial classes.

Contributions to the Physiology and Pathology of the Mammalian Heart: Philosophical Transactions of the Royal Society. By Dr. C. S. ROY and Dr. J. G. ADAMI. 1892.

A PAPER occupying 100 pages of the current volume of the Philosophical Transactions by Drs. Roy and Adami, entitled "Contributions to the Physiology and Pathology of the Mammalian Heart," gives a careful description of methods, instruments and results, the outcome of ten years' study, and will be welcomed by everyone interested in the mechanics of cardiac contraction. By means of the cardiometer—an instrument on the principle of the volume-recorders or oncographs so successfully employed on the spleen and kidney—the authors took prolonged observations of the systolic discharge from the two ventricles, and by means of an "automatic counter" they recorded the rate of total output. A third instrument—the myograph—served to record the changes of length of any desired portion of the ventricles, thus sampling the changes of their total circumference. These bare indications must suffice to indicate the means of approach devised by the authors; it is not possible to describe them intelligibly without figures. One of the most important results established is that normally the ventricles do not become completely empty at the end of systole, and we are told that with "increase of aortic pressure there is, other things being equal, an increase in the amount of residual blood." The actual quantity of this residual blood, under various circumstances, as compared with the quantity expelled, in systole—data which must have been frequently under observation—cannot, however, be found; nor are any of the cardiometric tracings supplied with a scale so as to enable us to form more than an approximate estimate of the volume-value of the lever excursions. Judging from the tracings, the systolic discharge (in small and medium-sized dogs) appears to have been between 5 and 10 cc.—i.e., lower than the values observed by Stolnikow. A large number of the authors' experiments relate to vagus effects—e.g., they show that with slower beat there is increased volume (× 2, × 3 or more), yet a diminution of total output (30 to 35 per cent.). From other experiments (chiefly by the myo-cardiographic method) we learn that the auricle is under closer subjection to vagus control than is the ventricle by reflex, as well as by direct excitation of the nerve; whereas the auricles (p. 220) may be arrested for hours, the ventricles soon resume contractions with an independent rhythm—indeed, we are informed that the vagus neither weakens the ventricular contraction nor exerts upon it any antitonic effect (pp. 224, 227). Moreover, muscarin arrests the auricle, whilst the ventricle goes on independently. The augmentor effects occasionally to be observed by vagus excitation came under the authors' observation, but are not believed by them to be due "to the presence of augmentor fibres such as are contained in the vagus of the frog," and the supposition is made that they may act by producing dilation of the coronary arteries. They are met with only in ill-conditioned animals. Evidence is also offered of the existence of cardiac fibres from the stellate ganglion, causing weakening of the auricular and ventricular contractions (p. 247). These may "*possibly*" be constrictors of the coronary arteries, and the authors themselves lay particular stress upon this word "possibly," having no evidence to offer in support of the supposition. Another section is devoted to the study of the augmentor nerves, and in conclusion the authors discuss the significance of the cardiac nerve mechanism from the teleological standpoint.

The Microscope: its Construction and Management. By Dr. HENRI VAN HEURCK, Professor of Botany at Antwerp. English Edition, re-edited and augmented from the Fourth French Edition. Translated by WYNNE E. BAXTER, F.R.M.S. With Three Plates and upwards of 250 Illustrations. London: Crosby Lockwood and Son. 1893.

THIS very handsomely got up volume is much more than a mere illustrated catalogue of microscopes and microscopic apparatus, for it is written by an author who has himself made considerable improvements in the construction of various accessory pieces, such as the "comparing ocular," and the "achromatic transformer," and in the application of electricity as an illuminant. As Mr. Baxter remarks, this work must necessarily be of interest to all who devote serious attention to microscopic work as a means of comparing the continental views and modes of thought with those of their own and other countries. The first chapter is introductory in its character, and deals with reflection and refraction of light, spherical and chromatic aberration and the general construction of the simple and compound microscope; the second chapter gives Professor Abbe's theory of microscopical vision, and is followed by a paper written by Mr. J. W. Stephenson, giving a series of experiments in support of Professor Abbe's theory, both of which are interesting. The invention of the microscope is ascribed to Zaccharias Janssen of Middelburg, about the year 1590, and the author describes briefly the several parts of an ordinary compound microscope. He then discusses the "objective," and holds that the best test of definition is still the nineteen-band test-plate of Nobert, though it may be replaced by the graduated diatom test of Möller and the median nodule of the pleurosigma, which presents a small ball terminated by an excessively delicate thread which is lost in the raphé. This latter is stated to be a hitherto unknown and excellent method, well adapted for a photographic test. The "ocular" is then described, with its varieties, including Huygens' and Ramsden's orthoscopic, compensating and projection oculars. An immense number of excellent engravings show the construction of the stage and stand of the great microscope makers, such as those of Zeiss, Leitz, Ross, Powell and Lealand, Beck, Bénèche, Reichert, Bézu and Hauser, Hartnack, Chevalier, Nachet, Crouch, Watson and others. Many of these instruments are designed for special purposes. Those who are interested in photomicrography will find a chapter devoted to that subject. The author considers that if sunlight be used a heliostat must be

employed, and that the simplest, most practical and least expensive heliostat with which he is acquainted is that of Prazmowski, which is supplied in Paris by Bézu, Hauser and Co. and in Potsdam by Hartnack. The last section of the work gives general rules for preparing microscopical objects, followed by a short history of the microscope and by a bibliography. The work reflects credit alike on the author, the translator and the publishers.

LIBRARY TABLE.

Traité Élémentaire de Physiologie. Par J. V. LABORDE, Directeur des Travaux Pratiques de Physiologie à la Faculté de Paris. 1ère Partie. Pp. 387, avec 155 figures. Paris: Société d'Éditions Scientifiques. 1892.—M. Laborde's treatise commences with a brief but interesting chapter on the technique of operations on the frog, guinea-pig, rabbit and dog, describing and illustrating the dissections requisite for the exposure of the heart, sciatic nerve and artery, external saphenous and jugular veins, the carotid artery and vagus in these animals. This section of the work stands therefore in relation to physiology as a dissector does to anatomy, giving an experimental demonstration of the facts stated—such, for example, as the action of curare, the proofs of recurrent sensibility in the motor roots, the phenomena of the degeneration after section of the spinal nerves—instead merely of the dry facts. M. Laborde does not think that the evidence at present advanced in regard to the capability of the conduction of impulses in either direction by every nerve fibre is valid. The evidence rests on Vulpian's experiment of dividing the lingual branch of the fifth and the hypoglossal nerves where they are in juxtaposition and effecting a suture of the central end of the fifth with the peripheric end of the hypoglossal. It is found that after the lapse of some months stimulation of the lingual above the point of union causes contraction of the muscles supplied by the hypoglossal. The defect of this experiment, as Vulpian himself pointed out, is that the chorda tympani, the fibres of which run in the lingual, is a motor nerve, and if this be cut no motor effects are observed. The second piece of evidence is that adduced by Paul Bert to the effect that the extremity of the skinned tail of a rat implanted in a wound in the back and divided at the root becomes attached, and after some months recovers its sensibility; but the objection here is that it is quite possible for union to have taken place between the sensory fibres of the tail and those of the skin of the back. M. Laborde thinks the only prospect of settling the question is by effecting union between the anterior and posterior roots of the second spinal nerve of the cat, in which animal the ganglion of this nerve is situated outside the spinal canal. He states that he is himself pursuing this inquiry. Continuing this subject, he gives the results of division of the several columns, of the grey matter of the spinal cord, and the laws of reflex action. He considers that the latter can best be shown in mammals by experimenting on kittens. If in these animals the calvaria be removed and the cerebrum be cleared away by a stream of hot water till only the pons Varolii is left the animal will remain alive for nearly a day, and all reflex actions can be well demonstrated upon it. After a careful exposition of the various theories that have been advanced—some on the basis of experiment, some on anatomical grounds and others, again, on pathological ones—in regard to the use and functions of the cerebellum, M. Laborde believes that the most correct view is that it is an organic centre of coördination and regulation of voluntary movements. Its normal activity is essential to the preservation of the harmony and the equilibrium of these movements and to enable them to work efficiently and surely together. The wide subject of the cerebrum and its functions is well and fully given. Altogether the work fairly represents the present standpoint of modern physiology, though we should like to have seen some notice of recent English work, such as that of Dr. Gaskell and Dr. Sherrington.

Royal Road to the British Pharmacopœia. By WALTER F. CLAYTON. London: Harmer and Harley. 1892.—In the introductory remarks the author commends his mnemonics to pharmaceutical, medical and other students, and he wishes his rhymes to be so thoroughly committed to memory that they may be recalled "and repeated mechanically," "without effort or apparent application of thought." He does not indicate to whom they are to be "repeated mechanically," nor what result might be expected to follow such lack o "application of thought." The doggerel verses are very much of the usual type, abbreviations abound, and t scanning is not always an easy matter. No doubt, if studied first in conjunction with the Pharmacopœia, these mnemonics might be useful to some students, but they leave many important official preparations untouched and appear to lay stress upon many which no one could possibly be expected to commit to memory.

Seventy Years of Life in the Victorian Era. By A PHYSICIAN. London: Fisher Unwin. 1893.—This is a pleasant, gossipy narrative of the experiences of one who has seen a good deal of the world ashore and afloat. Its descriptions o foreign parts are interesting and, without any attempt a literary display, the author has managed to import into his diary (for the record assumes this form for the most part) a considerable amount of information, useful as well as attractive. Pecuniary difficulties hampered the early career of the author, but friends seem to have turned up at the right moment, and he was thus enabled to obtain the funds necessary for passing an M.D. degree. He then for a time pursued a roving sort of life, not aimlessly, but with a fixed determination of being of some use in the world. Then came the war between England, France and Turkey, on the one hand, and Russia on the other. The general history of the struggle is well known, though various interesting episodes crop up from time to time in the course of his narrative of that campaign. The excitement of the war appears to have surfeited the writer, who subsequently settled down to peaceful pursuits, and of these the pleasures of travel, with the wide and varied information to be gained thereby, succeeded in engrossing his chief attention. His experiences and the incidents encountered in the course of his peregrinations and voyages are told in a familiar and unassuming fashion, and altogether the book, in which there are many illustrations, is one which may be recommended as a welcome companion during a leisure hour.

Kelly's Handbook to the Titled, Landed and Official Classes for 1893. London: Kelly and Co.—As stated in the preface, the object of this work is to include in one general alphabetical list all persons who have any definite position arising from hereditary rank, any recognised title or order, who are members of Parliament, or have distinguished status in the professions of law, physic and divinity &c. The Handbook is distinct in its scope and purpose, and does not intrude on the region occupied by directories of a somewhat similar character, but is useful as affording information which cannot be readily gained elsewhere.

The School Calendar and Handbook of Examinations, Scholarships and Exhibitions for 1893. London: Whittaker and Co.—In view of the possible passing in the near future of the Secondary Education (England) Bill that obtained last year a first reading, the book now under notice, which has reached its seventh year of issue, is likely to acquire increased usefulness. The information contained in it in respect of the nature and times of examination in universities, colleges and professional examining bodies during the current year is full and precise, and, so far as we have been able to observe, trustworthy.

THE LANCET.

LONDON: SATURDAY, MARCH 11, 1893.

THE friendly action which was instituted between the Royal College of Physicians of London and the General Medical Council to determine the legality of the claim of the former to the registration of its licence as a complete qualification in medicine, surgery and midwifery has at length been tried and has resulted in judgment being given in favour of the College. This is what we anticipated would be the issue. When writing after the first step in this contentious business had been taken we pointed out that the College had "since 1858 exercised its power of granting a complete qualification, and that that power was not removed by the Act of 1886" (THE LANCET, Dec. 5th, 1891, p. 1287). The legal proceedings, which culminated on Wednesday last in the judgment given by Lord Justice A. L. SMITH, arose out of the resolution passed by the Medical Council on Dec. 27th, 1891, by a majority of 19 to 6. That resolution, moved by Sir W. TURNER and seconded by Sir JOHN SIMON, ran as follows:—

"That as the claim made by the Royal College of Physicians of London that its single diploma of Licentiate or Member should admit to the Medical Register without any additional qualification would involve the admission by the Council that the College can itself confer a complete qualification in medicine, surgery and midwifery; and as this claim is based upon the interpretation of the Charter of the College along with the Medical Acts of 1858, 1860 and 1886: the Council leave it to the Royal College of Physicians to substantiate their claim in such a way as they may think fit and in the meantime instruct the Registrar not to register the qualifications of Licentiate or Member of the Royal College of Physicians of London as in themselves sufficient to admit to the Register."

The issue before the Court was, as Lord Justice SMITH said, a narrow one. It was whether at the time of the passing of the Medical Act (1886) the College of Physicians was a corporation legally qualified to grant diplomas in respect of medicine and surgery. This he held to have been clearly established. To determine this the judgment went back to the original Charter of Incorporation granted to the College by HENRY VIII., and he especially directed attention to the Act of 1540, which in its second section expressly includes within the definition of "physic" the "knowledge of surgery as a special member and part of the same." At the same time it is true that, as Sir HORACE DAVEY said, the Charters granted to the Society of Barber Surgeons, with which eventually the present Royal College of Surgeons was incorporated, did imply a distinction between the practice of surgery and that of physic. It is clear, however, that the College of Physicians possessed the right to give qualifications in surgery as well as in medicine, although it was not until 1862 that it imposed an effective examination in the former subject.

The College of Physicians has always maintained that in consenting to conjoin with the College of Surgeons for the purpose of granting efficient diplomas it had reserved its primary and peculiar privilege of granting diplomas which by themselves should entitle the holder to registration under the Act of 1886. It was this claim that the General Medical Council disputed, and it may be recalled that on the occasion of Sir W. TURNER'S motion, which has been the cause of this litigation, some members of the Council did not hesitate to impugn the sufficiency of the examinations conducted under the authority of the College. The attacks upon the College examinations were based on a confusion between the two very distinct classes of test applied to the Licentiates and the Members of the College respectively, for the latter is admittedly confined to the subject of medicine, and had it not been for the erroneous registration of a Member by virtue of this single diploma alone all the subsequent dispute might have been saved. The General Medical Council have not only failed to prove their point; they have elicited a judgment which, so far as the strict legal interpretation of the powers and privileges of the College goes, may be construed to award the College even more than it asked for; for it may be observed that the learned judge in his remarks made no distinction between the Licentiates and Fellows. He held that the term "physic" comprised that of surgery, and the logical inference is that instead of limiting the admission to the Register to those who have been actually examined in medicine, surgery and midwifery the General Medical Council might be compelled to admit Members and Fellows who possibly may not hold any diploma in surgery at all. We do not suppose that the College would ever press its rights in that direction. It is enough for it to have obtained confirmation by a court of law of its contention that the diploma granted for its licence is a qualification in medicine, surgery and midwifery, and the College may be trusted to maintain the standard of the examinations for that licence at as high a level as those for the Conjoint Board. We have not much sympathy with the General Medical Council, whose action implied that the College of Physicians, by retaining its ancient privilege, was unworthily endeavouring to open a back door to the Register; and we also think that if the facts had been impartially and fairly reviewed on the original occasion the majority of the members of the Council would never have taken a step which has led to this legal rebuff. On the other hand, the Licentiates of the College will be relieved to find that they have as much right to registration as any other holders of diplomas in the subjects of medicine, surgery and midwifery. The terms of conjunction with the College of Surgeons are such as to reduce in the future the possible number of holders of the licence alone into a very small proportion indeed; but it must be consoling to the College of Physicians to feel that, come what may, it can grant registrable diplomas without appealing to the General Medical Council for assistance in the choice of examiners.

APART from the interest of the recent speech of Lord SALISBURY at Oxford as a local question or its bearing on academic duties, it has a high interest to members of the medical profession. It is, indeed, a fact for medical men to note that the present and the late Premiers of England—her two foremost and most conspicuous statesmen in the last decade of the nineteenth century—have each taken occasion to speak in terms of high eulogy of the great profession of medicine and of its prospects. Some superficial observers talk as if medicine will be superseded as civilisation

advances. That is not the opinion of either Mr. GLADSTONE or Lord SALISBURY. Mr. GLADSTONE, overrating, we fear, the increase in the remuneration of medical labour, told us last week that certainly no fees were more nobly earned than those of medical men. Two years ago, in his capacity as Senior Governor of Guy's Hospital and when opening there a new medical college, he told us that ever since the time of MEAD and FREIND the profession had been steadily rising into a position of influence and power and general recognition, and that in his opinion it would continue to rise with the growth of civilisation which involved wants and infirmities which are the opportunity of medical men. Civilised man is more sensitive to pain than his savage brother, and we fear we must admit that the growth of civilisation neither abates his sensitiveness nor increases his tolerance of suffering. Worry is very much a product of civilisation—one of those refined and indefinable influences scarcely felt by savage races, tending to undermine health and predispose to disease. The factor of worry in the production of disease is very marked, and if medicine has not yet discovered a specific it is constantly in demand for means for the reduction of the effects of this morbid influence, and it may be assumed without undue boasting that the wise physician ministers to the sufferers from worry as powerfully as any other philosopher or friend. How much more brilliant is the service of medicine in the mitigation or removal of actual pain, even when amounting to agony, by the discovery and application of substances which control it and often the conditions and the causes of it. The eulogy on medicine as a science delivered by Lord SALISBURY at Oxford in his capacity of Chancellor of that ancient University is, indeed, one of the most significant and complimentary deliverances on the subject which history has to record. To be candid, it is one which could not have been pronounced with perfect accuracy until a period not far removed from the present. No doubt the true exponents of medicine have for a long time been on the track of truths of the highest moment to the human race, but it is chiefly within the last thirty years that a great advance has been made in the methods of medical investigation, the faithful pursuit of which promises the highest results for the welfare of nations and of individual men. Lord SALISBURY deserves credit for his courage in raising at Oxford, of all places in the world, the ground of the claim of an infirmary from one of mere charity—though that is high ground indeed—to that of its power to minister to the cultivation of one of the greatest of the sciences—the science of medicine. There have long been at Oxford men like Sir HENRY ACLAND and Dr. BURDON SANDERSON, who perceived the true greatness of medicine and wherein it consisted; but it is useless to deny that they have been "sore let and hindered" in trying to give it academic encouragement and position. The problems of life, as viewed by the physiologist and the physician—a view that is now being increasingly forced on all thoughtful men—have not been the problems that have hitherto commended themselves to the study of the men who have guided Oxford. Now that the two most powerful of her sons have so emphatically declared the importance of medicine not only as a profession but as a science (in Lord SALISBURY'S studied words "the most sober, the most absolute, the most positive of all sciences") we may confidently hope to see Oxford begin seriously to make amends for her neglect of this science in the past. For the understanding of man in all his relations and interests this science is indispensable. Truly, as Lord SALISBURY says, it is occupied largely just now in the attempt to investigate the "infinitely little"; but there is high authority for saying that the "small things" of the world have been made to confound the things which are mighty and more than once the heart and history of England have been mightily affected by the action of these said "small things" on her people and her potentates. The methods of medicine are now of the severest scientific kind, and would have been so long since and much sooner if such bodies as the University of Oxford had done their duty by science. She can make amends now just as her sister University of Cambridge has done. We admit that it was easier for Cambridge to graft on her mathematical school a great medical school as she has done; but still, as Lord SALISBURY says, Oxford has abundant means of teaching the group of sciences which are the equipment of the physician if she will but give her mind to the claims of science. If Oxford does not make amends she will be the loser. Unless both Mr GLADSTONE and Lord SALISBURY are wrong in their estimate, medicine is building on sure foundations a high and a lasting place in the estimation of mankind; and, unless her devotees stray into other paths than those in which they are at present reaping such precious fruits, their claim to a higher recognition than any at present accorded to them both by the State and by the educational bodies of the country will become irresistible.

We will, in conclusion, notice only one fact of interest in connexion with these remarkable pronouncements of the Premier and the ex-Premier. Both of them have been made, not when the speakers were in power, but when they were in opposition. We do not mean by this to imply that we have any doubt as to the sincerity of the speakers in expressing such opinions. It is the advantage of the relegation of such minds to the comparative leisure of opposition that they have time to consider other branches of knowledge than those immediately concerned in legislation and administration. Is it, however, too much to expect that when in power they will use their influence to secure for medical men that place and that recognition in the State which is surely the due of those who represent "the most sober, the most absolute and the most positive of all sciences," which is also in its office "only another name for a work of mercy" more "closely linked than any other with the relief of human suffering and the remedy of human calamity in its worst and most overwhelming forms"?

SCOTLAND is fortunate in having at the fountain-head of its active asylum life and work a man so able as Dr. CLOUSTON, and the *Scotsman* of the 28th ult., in referring to his last annual report as Physician-Superintendent of the Edinburgh Royal Asylum for the Insane, is fully warranted in speaking of him as "one who, besides possessing the knowledge and authority of a specialist in mental diseases, has a wide practical acquaintance with, and a deep philosophical interest in, the great social questions of the day." Without being afflicted with the *cacoëthes scribendi*, Dr. CLOUSTON is never unwilling to express

his views upon paper; he is not a faddist and his writings are always readable and interesting and full of common-sense—characteristics which give his annual report a value that seldom attaches to the almost always dull sentences of the average Blue-book. Dealing with the ever-recurring question of the increase of insanity, Dr. CLOUSTON tells us that in Scotland generally there is now one rate-paid insane person to every 392 of the population, while ten years ago the proportion was one to 435, showing an increase of insane to sane of 11 per cent. In England the rate-paid insane is found to be one to every 335 of the population now as against one to every 347 ten years ago. Scotland therefore has the advantage of England in total numbers, but the proportion of increase in the insane in England has only been 3·3 per cent. in the ten years against Scotland's 11 per cent. Some explanation of this is sought in the fact that a Lunacy Act has been longer in operation in England than in Scotland by a period of twelve years, thereby facilitating the official recognition of the insane; but we cannot help thinking that this explanation ought before this to have arrived practically at vanishing point, seeing that the English Lunacy Act has been in existence for half a century. Other causes of the difference must be sought for, and they will no doubt be found in groups of circumstances and social conditions which are found to vary in their outward expression amongst the populations of the two countries, where we have, besides legislation and classification, methods of distribution as to the insane established on lines that are by no means parallel.

That this contention has some weight is evidenced by statements made by Dr. CLOUSTON himself. For instance, with regard to Ireland, where the Lunacy Act has been in operation longer than in Scotland, he points out that there is now the very large proportion of one lunatic to every 280 of the population, while ten years ago that country had only one to every 371, showing an increase now of 32·5 per cent. Again, in this relation, he refers to an individual Scottish county, Argyle, where there was one insane person to every 200 of the population, but the increase of that proportion in the last ten years has only been half of what it had been in Ireland. Dr. CLOUSTON thinks that the natural explanation in both cases is a "diminishing population through the emigration of many of the most energetic and healthy, the poor and the old and the lazy, the insane and those lacking in intellectual and physical energy, being left." No one will be disposed to question this broad statement, which exemplifies one of the conditions in active operation as a means of disturbance in the balance of the proportion of the insane to the sane in one country as compared with another. Leaving the pauper lunatic, Dr. CLOUSTON becomes critical on the subject of the non-pauper insane. He points out that in Scotland the number of the self-supporting insane now stands in almost the same ratio to the population that it did in 1876, and this in spite of an enormous increase which Dr. CLOUSTON says has taken place in the proportion of well-off people in the country. "If," he says, "insanity as a disease is increasing, why should its increase be confined to those who got treated at the public expense?" Truly a pertinent question, if it is so confined.

On this subject we should have been glad if Dr. CLOUSTON had given us some supporting gleams of comfort from a comparison with statistics in England. In its greater comparative homogeneity of race, and presumably of hereditary mental constitution, Scotland affords, as compared with England, a sufficiently circumscribed sphere for the study of national characteristics, whether normal, abnormal, or diseased; and it is most interesting to find Dr. CLOUSTON raising valid and strong questions of the sort, even although only in the limited compass of an annual report. The *Scotsman*, in its leading article, says on this subject: "It has been contended, and there is a good deal of evidence as well as probability to support the contention, that this spread of mental infirmity is part of the penalty which the human organism and intellect have to pay to modern civilisation—that the brain is harder worked and suffers more frequent breakdown; that the pace is telling on the race. The gains may be worth this and other items of cost; but humanity would certainly be put somewhat out of conceit with progress on present lines if it could be shown that the higher the plane of civilisation the greater the proneness to madness." Are Dr. CLOUSTON's figures and statement of opinion on this subject accurate and incontrovertible as regards Scotland? And if as regards Scotland, are we to interpret them as being applicable to England and other countries? We hesitate to accept the minor proposition without more complete demonstration. As we have pointed out above, Dr. CLOUSTON shows that, through emigration of the most energetic and healthy, those lacking in intellectual and physical energy are left. The traditional allusion to Scotsmen leaving home in search of the fleshpots of the South has in this relation a significance and a force not usually claimed for it, and that it applies not merely to individuals of the labouring and less intellectual class is evidenced by the eminent success of Scotland's sons in all parts of that empire upon which the "sun never sets." We merely suggest this general point as a factor for consideration in an important question of this kind. And, again, even if the most highly civilised individual himself has been blessed with stability enough to avoid relegation to the ranks of the insane, may he not be responsible for the initiation, or at all events for the transmission to his offspring, of a possible heritage of nervous instability or proneness to insanity which renders them less able to earn their livelihood and to resist becoming rate-paid inmates of asylums? Our readers will do well to obtain this report on the Edinburgh Asylum for 1892 and study it for themselves.

So far as may be gathered from the columns of the local press the authorities of Leicester have been acting very much at cross purposes since small-pox arose in their town, much to the surprise of certain of its councillors, who have for years past not only been vaunting the superiority of Leicester and its "method" of dealing with that disease, but have also been sedulously decrying the efficacy of vaccination. The *Leicester Daily Post* of March 1st gives a strange insight into the doings of this much-perplexed and much-divided municipality, which has not the courage of its opinions, but is content to waste time and money over an "inquiry" into the causes of the outbreak, whilst refusing grants to improve the accommoda-

tion so sadly needed for the isolation of infected families. We cannot think that the proceedings of the Town Council during the past few months will be regarded with satisfaction when its history comes to be written. It seems to be occupied largely in checking the endeavours of the sanitary committee to cope with the disease out of consideration for the ratepayer, whilst it has sanctioned a wilful expenditure on an inquiry which can lead to no good end. To review the whole of its proceedings during this period would entail more space than they merit, but they may be summed up in a word as a policy of drifting, which began last autumn when the proposal to erect a new fever hospital, although it had been adopted and the plans had been approved, was abandoned. Then small-pox broke out, and the effete buildings, which had been put up twenty years ago and which were at the time largely occupied by scarlet fever cases, had to be utilised for the reception of small-pox cases. Of course, some of the unfortunate children in the fever wards contracted small-pox; it is only surprising that more of them did not take the disease than were attacked, so close is the proximity of the fever wards to the small-pox wards. Still, there was a sublime confidence that Leicester was not likely to suffer from an epidemic of small-pox, the "Leicester system" being all-sufficient, and it would almost seem as if the inquiry which the sanitary committee have instituted were the result of chagrin at the failure of the "system" to keep out the disease; for, in spite of confident predictions to the contrary, Leicester has not been free from small-pox since September last. As to the steps taken by the sanitary committee and the Town Council, we cannot do better than quote from the leading article in the above-named journal, which commented on the proceedings of the meeting of the Council held on Feb. 28th:—

"Our guardians of the public health formally recommended that the Council should accept a tender of £1762 for the erection of a building adjoining the fever hospital, as previously authorised by the Council. Not only, however, was this proposal negatived, but it was superseded by a resolution that the Council should apply to the Local Government Board for power to borrow £2500 to carry out some similar scheme or other which was not specifically identified. Of course, the open secret of this latest change of front—this new reverse for the unfortunate and bewildered sanitary committee—is only too plain. It is to be found in the impending Budget, with its huge addition to the rates and the irresistible fear that the imposition of another penny in the pound would provoke an absolute revolt on the part of the already alarmed and indignant ratepayers."

The article goes on to admit the "utter inadequacy of the present hospital alike in accommodation and internal arrangements," and the need for another building for the purposes of isolation and quarantine; but, as if to show how hopelessly at variance with one another the very members of the committee are who are entrusted with the system associated with Leicester, we find the following frank admissions in a later paragraph:—

"The striking feature of the debate was its testimony to the necessity of reconsidering at least one part of the municipal plan of campaign against small-pox. We allude to the 'rotten and expensive system'—to quote the scathing indictment of the vice-chairman—by which large numbers are housed at the hospital, fed 'like fighting cocks' on 'beef and beer,' and yet not sufficiently isolated to be as thoroughly quarantined as they might and otherwise would be at home. Certainly, if this specific feature of the Leicester experiment has proved a comparative failure—and it is frankly admitted—its supersession by the economical and more efficient home system can hardly be too rapid and complete."

And these are the words of a writer who cannot, we imagine, be actuated by any desire to humiliate Leicester or to depreciate its capability for dealing with infectious diseases. In one passage there are pleas for extended provision for "quarantine" and in another a desire to abandon the "system" altogether. The fact seems to be that this visitation of small-pox, which found Leicester lulled into a false security, has revealed a lamentable state of indecision and unpreparedness amongst those responsible for the health of the borough. The outbreak is not yet over; it may at any time attain dimensions which will necessitate very vigorous action, but no impartial onlooker can come to any other conclusion than that Leicester has forfeited its claim to be considered as a municipality which is possessed of ordinary foresight in dealing with zymotic disease. However, as if in vindication of its apathy in one direction, we read in the *Leicester Daily Post* of Feb. 28th that on Feb. 27th a man was prosecuted for failing to notify a case of small-pox in one of his children, who appears to have been attacked subsequently to the cessation of the surveillance to which his household had been subjected on the illness of another child. The case was held to be proved and a fine was inflicted, the penalty being mitigated in consideration of the fact that two or three more of his children have been attacked with the disease, of whom one has since died. The defence was a plea of ignorance of the nature of the illness—a perfectly reasonable ground; but under the special circumstances of the case this plea could hardly be sustained. No medical man was called in to this case, and the parents may have hoped against, or have shut their eyes to, the possibility of its being small-pox. The previous case had been treated at the hospital, and they must now bitterly regret that they did not take steps to prevent the infection of their remaining children by notifying the medical officer of this case or, at any rate, of consulting him as to its nature. It is, however, not unlikely that they, as so many of this class do, did not believe in the contagiousness of small-pox, which has had for them such disastrous results. We should be sorry to think that they had ever been encouraged in that opinion, although there is no accounting for the vagaries of some would-be instructors of the people on these subjects.

Annotations.

"Ne quid nimis."

ALABASTER AND OTHERS v. THE MEDICAL BATTERY COMPANY.

THIS case, which was tried on Tuesday and Wednesday last in the Queen's Bench Division before the Lord Chief Justice and a special jury, formed a fitting sequel to the case of Tibbits *v.* Alabaster and Others, which was reported in THE LANCET of Feb. 25th. It will be within the recollection of our readers that the former action was brought by Dr. Tibbits, who had been severely criticised in an article in the *Electrical Review* for the part which he had taken in support of the trade in "electropathic belts." Dr. Tibbits, however, failed signally to make out his complaint, and although he had been subjected to a very severe attack the

jury awarded their verdict to the defendants. The Medical Battery Company seems, however, to have thought that it would be a good thing to retaliate upon its critics by attacking the circulation of their paper, and accordingly caused a circular letter to be addressed to the newsvendors of London denouncing the criticisms in the *Electrical Review* as "malicious libels," and warning the tradesmen that they would be held personally responsible if they continued to circulate defamatory statements concerning the Medical Battery Company. The strategy of this measure was exceedingly well conceived, and for a time very serious inconvenience, and even injury, was inflicted upon the proprietors of the newspaper. Their customers, being very naturally indisposed to interfere in the discussion, demanded an indemnity and refused otherwise to circulate the paper. The indemnity, therefore, had to be given and a responsibility assumed which might well have deterred less resolute journalists from maintaining so arduous a struggle. The proprietors of the *Electrical Review*, however, did not tamely submit to this inconvenience. On the contrary, they brought an action for the libel contained in the circular, and claimed damages in respect of the injury done to their trade. They have succeeded in the most ample measure, and it is matter of satisfaction, not to themselves alone, that their verdict of £1000 will probably make the directors of the Medical Battery Company and other persons like-minded hesitate before renewing the attempt to stifle criticism in this way. The damages are significantly heavy, but, having regard to the conduct of the defendants both before and at the trial, we are bound to say that they do not appear to us to be excessive. They signify, of course, that the jury felt that the case was one for exemplary treatment. The defendants had been denounced as persons who traded upon the weakness and credulity of sick and suffering people, and who sold worthless trash under the name of curative appliances. When evidence in justification of these most serious charges was tendered they endeavoured to shut it out upon a technical objection, and when their objection was overruled they did shut it out by admitting the libellous character of the circular and going to the jury on the question of damages alone. That the jury should have thought that such chicanery deserved to be visited with heavy damages does not surprise us; and although we think that there is, perhaps, at the present time some disposition on the part of juries to exaggerate the offence of libel and to award, when it is proved, disproportionate damages, we consider that there never was a case in which severity was more merited by the circumstances of the offence or better calculated to prevent its repetition than the present, an account of which will be found in another column.

YEW POISONING.

To determine the causes of the capricious occurrence of yew poisoning in cattle Mr. Stuart Wortley undertook some experiments and published his results in *The Times* in the course of last summer. His letter was followed by a conflict of evidence from various quarters, the general bearing, however, showing a widespread belief amongst agriculturists in the frequent toxic influence of the yew. Little good could be expected to result from the discussion of such a question in a daily paper, hence it is satisfactory to find that the matter has been revived in a quarter which is more likely to yield material based upon accurate observation and research. The journal of the Royal Agricultural Society contains papers by four writers, each of whom discusses the subject from a different point of view. Mr. E. P. Squarey gives from his own experience a list of the most striking instances of deaths of animals after eating the foliage of yew trees. His examples include the Irish yew or Florence Court yew (taxus fastigiata), and the English yew (taxus baccata), and they show also that the nature of the soil upon which the plant grows appears to have no influence in promoting toxic effects. Mr. Charles Whitehead, after noting the small amount of definite information in English works, gives a summary of a recent French publication by M. C. Cornevin, professor at the National Veterinary School. This writer is of opinion that yew does not act as an irritant, but as an anæsthetic and narcotic at first and later on by stopping the action of the heart and by affecting the respiratory system. Judging by analogy, he thinks it acts upon the nerve centres. In view of the rapidity of action, M. Cornevin makes the very ingenious suggestion that there may be a chemical combination within the animal organism analogous, perhaps, to that which produces prussic acid in certain species of amygdalus. The third paper is from Mr. William Carruthers, F.R.S.: he gives a reference to a description of toxic symptoms in man; he states, as a matter of common knowledge, that children eat the fleshy part of the fruit with impunity, but that when the thin crust surrounding the seed is broken, and the seed itself crushed and swallowed, fatal results have ensued. On the other hand, he doubts whether there is any foundation in fact for the asserted differences in toxic qualities in the stem or foliage of the two sexes of the yew. In the fourth paper, by Mr. J. M. H. Munro, chemical questions are mainly dealt with. The methods of separating the specific alkaloid *taxine* are given in detail, and it is suggested that chemical changes in it may have been produced in the processes of extraction employed by Amato and Caparelli. While admitting that *taxine* is probably the poison of the yew, it is considered doubtful whether it has ever been obtained in a pure state, and also probable that other alkaloids are present. In Mr. Munro's experiments he obtained a greater quantity of crude alkaloid from the male leaves than from the female; but he does not regard this result as conclusive and he suspects that the successive stages of purification cause an actual alteration in composition. The whole question, therefore, of the precise conditions under which yew is poisonous to horses, cattle, sheep and "game" still remains unsolved, though its importance merits, and will doubtless receive, the closest investigation.

THE ASSOCIATION OF FELLOWS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A MEETING of the Committee of the Association of Fellows of the Royal College of Surgeons of England was held on March 8th. Mr. George Pollock, the President of the Association, occupied the chair, and there was a large attendance of members of the Committee. The minutes of the last meeting were read and confirmed. The hon. secretary read several letters of regret from members of the Committee who were prevented from attending. He also reported that the correspondence between the Committee and the President of the College had been printed and sent to every Fellow of the College whose address was known, as well as to the medical journals, in accordance with the instructions given to him at the last meeting of the Committee. It was for the Committee to decide whether any further step should be taken in the matter. A discussion ensued, and the general feeling was that, as the Association had been sufficiently vindicated, it was undesirable to take any further action. The next subject of discussion was the vacancies on the Council of the College which will be created in July next by the retirement in rotation of three members of that body in accordance with the charters. It was reported that the retiring members would be Sir Wm. Savory, Bart., Mr. C. N. Macnamara and Mr. Oliver Pemberton. The hon. secretary was instructed to write to the two latter gentlemen, who had been connected with the Association for some years, and at a previous election had received

the support of the Association, for the purpose of ascertaining whether they intended or not to offer themselves for re-election, as the nature of their replies would largely determine the action of the Committee in regard to the nominations and support of candidates at the election next July.

THE LANDSLIP AT SANDGATE.

IN the calamitous landslip at Sandgate, due, it has been alleged, to the subsidence of the sandy hills on which the town is built on their being left dry by the return of the subsoil at ebb tide, and accelerated, no doubt, by the exceedingly rainy weather which was prevalent during almost the whole of the month of February, the seaside convalescent home known as the "Beach Rocks" has fortunately escaped damage and is being requisitioned by the Admiralty and many others as a resort for those who have been rendered destitute and homeless by the aforesaid catastrophe. We are informed that on Sunday night much alarm existed amongst the inmates, but this was allayed by the combined efforts of the nursing staff and of the secretary, Mr. John James Jones, who during the whole of the night was present in the home to render any assistance that might have been found to be necessary.

THE LANCET INVESTIGATIONS ON CHOLERA IN FRANCE.

Le Petit Marseillais of March 4th contains an interesting account from the pen of M. Gaspard Galy of an interview which he has had with our special correspondent, who is at present investigating the conditions and circumstances to which the recent outbreak of cholera in Marseilles may be attributed and the results which have arisen in consequence. In the course of the article the former observations and researches which have been from time to time published in the columns of THE LANCET and which our correspondent has, after much labour, been able to supply to our readers, are set forth with considerable detail. The writer says: "La grande publication anglaise THE LANCET qui fait son objet spécial des questions de médecine, de chirurgie et d'hygiène vient d'envoyer son rédacteur spécial à Marseille, où il vient procéder sur place à une enquête sur les causes et les effets des dernières épidémies." He goes on to say that he has followed with much interest the plans and drawings which our correspondent had laid before him and which rendered it easy for him to understand the sanitary history of the town. He further states that our special correspondent had cited examples of the absolutely ridiculous means adopted in certain localities for combating the disease.

TEA, COFFEE AND COCOA.

EVERY point scored for temperance is a gain to national health, and we have satisfaction in noticing such an advance as is indicated by a lecture delivered recently by Dr. W. Woodward on behalf of the Worcestershire Health Society. The subject was "Tea, Coffee and Cocoa." As might have been expected the first-named of these beverages received the largest share of consideration. Its varieties, its different qualities, its chemical properties, its modes of preparation true and erroneous, were discussed at some length and with the happy result that it may still be regarded as a wholesome stimulant and restorative of the nervous system which, if properly made and used in moderation, is guiltless of after ill-effects. A comparison between the different known methods of preparing tea is of some general interest, the Japanese plan—which allows infusion for about a minute and a half, and which does not require boiling water, cream, or sugar—having evidently an attraction for the lecturer. For general use, however, he recommends the ordinary British custom, the infusion being drunk whilst recent and not strong. In this country we stand in equal, if not greater, need of teaching in regard to the qualities and preparation of coffee and cocoa. The former of these wholesome luxuries was treated of in considerable detail. We should have welcomed a somewhat fuller exposition of the properties and uses of the latter. A recommendation of cocoa in the nourishment of infants is, however, noteworthy and should prove of some practical service. The question of cost was not forgotten. The estimate for a cup of good tea ($\frac{1}{2}d.$) and of good coffee ($\frac{1}{4}d.$) is instructive when the prices charged in many restaurants for infinitely poorer stuff are held in mind.

MEANS OF ISOLATION AT WEST HAM.

WEST HAM is in considerable difficulties as to hospital accommodation for infectious diseases. The question of small-pox has again and again been the cause of postponing the provision of a hospital and it still stops the way to some extent. There is a building that might be used were it not that if small-pox were received into it a Poor-law institution would suffer. Dr. Barry, representing the Local Government Board, has conferred with the sanitary authorities within the West Ham Union and at a preliminary interview he advised the formation of a joint hospital board and the provision of separate hospitals—one for small-pox and another for the other infectious diseases.

DEATH UNDER CHLOROFORM.

A DEATH under chloroform took place at Hanley on Feb. 21st. The patient was a well-built and robust young man of thirty-four, a mould-maker, who had contraction of the palmar tendons of the right hand caused by an injury he had received some years ago. It was with the view of setting free those tendons that Mr. W. D. Spanton had undertaken to operate. Chloroform was administered by Mr. Aiken, the patient having been previously put to bed in his own house. The patient took the anæsthetic well. There was a good deal of shouting during the stage of excitement, which passed off as usual with a brief general spasm of the muscular system, and then the man's respiration became regular and he was pretty well under the influence of the anæsthetic. It was shortly after this, about ten minutes after the commencement of the administration of chloroform, that the pulse suddenly ceased, the respiration stopping immediately afterwards. The tongue was pulled out and artificial respiration performed, and a nitrite of amyl capsule was held under the nostril; but although artificial respiration was kept up for some time there was not the slightest sign of returning consciousness. The chloroform was administered on a fold of lint, held a little distance over the mouth; the operation had not been commenced. A post-mortem examination of the body was made by Dr. Charlesworth and Mr. Adler. The lungs were congested and the right side of the heart was full of dark liquid blood. The walls of the heart were flaccid and somewhat thin. The man had always enjoyed good health.

THE "ESPOSIZIONE" OF THE INTERNATIONAL MEDICAL CONGRESS.

AN Italian correspondent, under date Rome, March 5th, writes: "Among the many features in which the organising committee are working to make the coming Congress a distinct advance on its predecessors is that of a medical exhibition, 'which shall place on view, conveniently arranged and effectively catalogued, every article, object, appliance or appurtenance of the healing art in its widest acceptation.' A special 'Comitato Esposizionario' has just been appointed *ad hoc*, including such representative names as that of the Commendatore Professor Pagliani, Director of Public Health; Signor Bentivegna, the distinguished engineer; Signor Marzari, a public auditor of approved

ability; and others not less fit for the work of organisation. Professor Pagliani is its president, and under his energetic auspices circulars inviting the contribution of specimens of every kind of medical *matériel* are now ready for transmission to pharmaceutists, surgical instrument makers, food manufacturers, wine growers, mineral water agents—to all, in short, who cater for the professional requirements of the practitioner. Many of these specimen-contributions, indeed, are on their way to the 'Esposizione,' their contributors being, not unnaturally, interested in securing an advantageous *locale* for their contributions. The alimentary and wine departments will, I have good reason to know, be richly represented not only by Italian purveyors and by British houses established in Italy, but by those of other nationalities—Swiss, Austrian and German in particular. For all contributors from abroad the Commendatore Pagliani is exerting his great influence—parliamentary, social and professional—to secure facilities for the convenient consignment of their wares *en route* to the Exposition by reducing railway charges and minimising Custom House formalities to the vanishing point. That the 'Esposizione' shall be 'la nota saliente' (the outstanding feature) of the Eleventh International Congress of Medicine and Surgery is the avowed object of the Commendatore Pagliani and his coadjutors on the committee, and certainly they are sparing no effort to be as good as their word."

EMPLOYMENT FOR THE BLIND.

WE may safely say that, with the exception of those mentally afflicted, no class of the population have suffered so much from the want of employment entailed by their condition as the blind. They have not, indeed, been left altogether without means of livelihood, and some few, favoured by social position and means, have attained to the discharge of great and useful functions. As a rule, however, the blind man's calling has consisted merely in the practice of some simple handicraft requiring for its exercise only the most moderate amount of intelligence. Of late years a change has begun to come about. Much has been done by means of specially directed education to increase the intellectual and practical energy of this once neglected class and thus to justify their occupation in work of a more complicated and responsible character. There exists in consequence a need of such employment, so modified and adjusted that the sense of sight shall not be indispensable to its exercise, and indications are not wanting to show that the demand may be satisfied. As an illustration we may mention the recent introduction by Mr. F. W. Smith of Brighton of a typewriter intended for the use of blind persons which prints embossed characters and is adapted to any type. This invention, we repeat, is noteworthy, not only for its own sake, but as indicating the growth of a purpose which promises to bring more and more within reach of the hitherto incapable blind a considerable part at least of the privilege of work enjoyed by their seeing neighbours. We might suggest the telephone and even the telegraph systems as other possible outlets for their energies.

ANNUAL DINNER OF THE ROYAL MEDICAL SOCIETY OF EDINBURGH.

THE dinner of this Society was held in the Waterloo Rooms, Edinburgh, on the 3rd inst., when a large gathering of members and of the profession was present. The Senior President, Dr. Carmichael, occupied the chair, supported by the Vice-Presidents, Dr. Crerar and Dr. Rainy, as croupiers. The Lord Justice Clerk and Sir Dyce Duckworth supported the President, who was the guest of the evening. Sir Dyce Duckworth proposed the toast of the Royal Medical Society and, in the course of his speech, referred to his long connexion with the Society as a former President and as one of its honorary members. Referring to the new ordinances of the Scottish Universities Commission, he criticised the proposal to cut down the stipends of the professors in medicine, surgery and midwifery. With the decay of the University faculty in Edinburgh would inevitably come that of the great extra-academical school, which was so valuable a training-ground for the professors of the future. And who, he inquired, was to benefit from the surplus fees won by the hard labours of the eminent man who conferred renown on the school? Professors of the subjects specially selected for this treatment required of all others large practice to enable them to teach with efficiency, but the gains from this source could never be very large in Edinburgh. In America they understood these matters in a very different sense, and made their University chairs prizes and objects of ambition. He characterised the new ordinance as nothing better than a proposed endowment of mediocrity. Reverting to the proposals to promote special studies in certain departments, he vigorously condemned them. Indeed, he declared that the public was already demoralised by specialism and the profession somewhat degraded from its rightful position by it; and he urged his younger hearers to become great as great physicians and great as great surgeons, sound and "all round" practitioners of all parts of the one and undivided healing art, and not petty with the pettiness of specialism.

THE DENTAL HOSPITAL OF LONDON.

SOME months ago the Medical Committee of the Dental Hospital were impressed with the conviction that the building in which so much useful work had erstwhile been carried on was inadequate to its demands. Various inconveniences had for long been experienced in consequence of the want of proper accommodation for the medical officers and the school attached to the charity, as well as for the patients who resorted to it. It was therefore determined to seek means by which a building more worthy of its purpose than the one already in existence might be raised; and at the annual meeting of the friends and supporters of the institution, held this day (Friday), it was announced that the project had assumed a form which gives fair hopes of its realisation. The committee of management have decided to purchase, indeed have already secured, a new site for the purpose. A new hospital and the site (on the south side of Leicester-square) will, it is estimated, cost something like £40,000, towards which sum something like £6000 have been raised or promised. It is to be desired that the appeal which the committee has issued may be liberally responded to, and that the hopes of the friends and supporters of the institution may in this matter be quickly and satisfactorily realised.

OUR SCHOOLMASTERS AND PERSONAL HYGIENE.

WE would call attention to an excellent address delivered by the Rev. J. E. C. Welldon, the head master of Harrow, to the Birmingham Teachers' Association, which is published *in extenso* in the *Contemporary Review* of this month. We need not enter upon the teacher's self-training and self-discipline from the moral, social and intellectual side. It is with the physiological or health side that we are concerned, and from this standpoint we are impressed with the wisdom and common-sense of the advice that is given. As regards the importance of observing the laws of health, it is very pertinently pointed out that if good temper is essential to courtesy, good health is essential to good temper. "To be well is often the true secret of teaching well. Fatigue conduces to futility. Indigestion is the mother of indiscretion. A weary schoolmaster or schoolmistress is a dreary one." The importance of a good night's rest is dwelt upon. A teacher ought always to be at his best, and time spent in sleep is a good investment—at least for all who work hard; "it is all up with him if he takes a doze in school." Again, if Nature

demands sleep she also demands exercise. The demand may be refused or ignored, but retribution is sure to follow. According to the Rev. J. E. C. Welldon's experience, payment with heavy interest is claimed about the age of fifty. "The man who has taken no exercise breaks down. A breakdown is not a break-up; he resumes work after a time, but he is never again the same man." There are so many forms of exercise nowadays that it is comparatively easy for a teacher to guard against the evils of too sedentary a life. The remarks on the proper use of holidays, on rest and change, on the cultivation of a variety of interests, on the avoidance of a narrowness of mind, on the advantages of large and lavish reading and on novel-reading as a means of taking people out of themselves, which is often, perhaps, the best holiday they can have, if not altogether new, have, in our opinion, the merit of being altogether true. The peril of reading no novels is alleged to be much more serious than that of reading too many. On these and several other subjects we consider that much wholesome and wise counsel is given which is likely to prove helpful to those concerned; and to those who reject or disregard it we can only say that we are sorry for them, and still more sorry for their pupils.

AN INCENTIVE (!) TO LIFE-SAVING.

AT an inquest held by the Southwark coroner, at Guy's Hospital on the 7th inst. a witness who recovered the body of a young woman, in whose case animation was subsequently restored for a few hours, asked the coroner whether he would be allowed the fee for recovery of a body. The coroner informed the applicant that the fee was only paid to a person recovering a dead body in a navigable river. The deceased was alive when taken out of the water, and the witness was therefore not entitled to remuneration. The applicant said that he had spoiled a suit of clothes in endeavouring to save the young woman. Had he been a few minutes later in reaching the deceased, life would have been extinct and he would have been entitled to the fee. Comment on the above-mentioned monstrous state of affairs might be summarised in Dominie Sampson's exclamation, "Prodigious!" We feel constrained, however, to add that "something is rotten in the state of" England's laws which permits such a glaring anomaly to be perpetuated at the close of the nineteenth century.

CRIME, SENTENCE AND SUSPENSE.

THERE is no stronger proof of the essential and inseparable connexion which exists between the medical profession and all that concerns the moral and physical health of mankind than the frequency with which the opinion of its members is sought in relation to the origin, processes, detection, punishment and prevention of crime. We need hardly point to the familiar question of sanity by way of illustration. All our modern prison usages, our means of punishment, our methods of reform, likewise imply and indicate the same vital connexion, and thus exemplify so many remedial agencies intended not so much to dispose of a dead monster of convicted guilt as to reach and combat its still living forms. Nor is this beneficent influence traceable only through its physical manifestations. It operates also at all stages of the criminal descent by mental and moral processes, and even in the presence of death combines its friendly offices with those of the more strictly spiritual adviser. This last phase of its usefulness has recently been discussed in some detail by a correspondent, who draws our attention more especially to one particular point in the history of retribution. He objects, and with reason, to the frequently long duration of suspense in which many a prisoner who is aware that efforts are being made to obtain a mitigation of the death penalty is allowed to remain until almost the hour appointed for his execution. He would have the public, the medical profession, and especially those in authority, realise what is implied in an interval of two or three weeks thus passed in mingled hope and fear, its numbing influence on any movement towards confession or on any process of self-preparation for the final change, which excludes all earthly interests. How much more merciful it would be, he says, if the final Yea or Nay of Her Majesty's representative were communicated to the doomed offender at an early date after his conviction by the jury. No words of ours are needful to commend the justice of these observations. We trust that they will not be overlooked by those with whom rests the power to give them practical effect. We may here, however, be allowed to question whether petitions for the mitigation of sentences do not sometimes themselves constitute an avoidable difficulty in arriving at that early decision which in this matter is so desirable. Most people can recall the memory of cases in which the petitions prepared were clearly certain of rejection, and the fate of such may serve as a needed check upon the impulses of a false public sentiment.

THE DESTRUCTION OF CARBAMIC ACID BY THE LIVER.

IN the last part of the *Archives des Sciences Biologiques* Drs. Hahn, Massen, Nencki and Pawlow give an account of an interesting investigation following up previous researches by Dr. Eck in 1877 and Dr. Stolnikow in 1882 on the effects produced on the animal economy by diverting the portal blood into the vena cava so that it should not supply the liver. Sixty animals were operated upon, all being narcotised. Of these, forty succumbed to accidental causes. Those that survived underwent a complete change of character; from being quiet and docile they became troublesome and obstinate, and in some cases violent and dangerous. They also suffered from repeated clonic convulsions, followed by coma, during which latter state any irritation frequently caused the convulsion to reappear. In some cases the convulsions proved fatal; they could also usually be provoked by giving the animals meat. A very striking fact observed in all the animals was the presence of a considerable amount of carbamic acid in the urine—a circumstance which led the writers to surmise that this might be the factor producing the peculiar conditions observed. To determine the point a number of experiments were made on healthy animals by introducing carbamate of sodium or calcium into the circulation. These appeared to warrant the conclusion that the toxic action observed in the first series was due to carbamic acid, and that the liver has amongst other functions that of transforming the carbamic acid which collects in the blood in normal conditions into urea.

THE BRESSA PRIZE.

THE Turin Academy of Sciences, in the terms of Dr. Cesare Alessandro Bressa's will, announces that the competition for the prize for the best scientific work and discoveries made in the four years from 1889 to 1892—a competition restricted to Italians—closed on Dec. 31st, 1892. Now, however, the competition for the ninth Bressa prize is open, and scientists and inventors or discoverers of all nationalities are invited to come forward. The conditions are thus stated: "The prize will be awarded to the person, whatever his nation, who during the quadrennium 1891-94, in the judgment of the Turin Academy of Sciences, shall have made the most remarkable and most useful discovery or produced the most distinguished work in the fields of physical and experimental science, of natural history, of mathematics pure and applied, of chemistry or of physiology and pathology, not excluding geology, history, geography or statistics."

The competition closes on Dec. 31st, 1894. The sum set apart for the prize, after deducting the Italian income-tax *(ricchezza mobile)*, amounts to 10,416 fr. (£416 13*s.* 4*d.*) All competitors must, within the above-named period, communicate by letter with the President of the Academy and at the same time present the works with which they intend to compete. The work must beprinted, manuscripts being excluded from consideration. The unsuccessful works will be returned to their authors on a special request made within six months from the adjudication of the prize. No Italian member of the Academy, resident or non-resident, can compete or receive the award. The Academy reserves its right to bestow the prize on the "most worthy scientific man," although he may not have entered the competition.

MUSIC AS AN AID TO MEDICINE.

MUSIC, which has of late been sending forth new trial shoots in the field of therapeutics, was again brought under the notice of the profession in this connexion by Dr. J. G. Blackman in the January number of the *Medical Magazine*. Defined by this author as the language of sounds, its effects are briefly stated to consist in the production of motion, with liberation of nerve force and a generally pleasant result. The observations of Dogiel are again quoted as proving its regulating effect upon the circulatory system and its consequent close relation to tissue nutrition. It is doubtless in this way that its exhilarating or calmative influence in conditions of mental disease may best be explained. The article above mentioned is interesting to us as conveying the first definite statistical evidence we have met with respecting the employment of music in clinical medicine. The observations of Dr. J. Ewing Hunter at the Helensburgh Hospital go to show that amongst the obvious effects of its use relief of pain has in many cases been most marked, and we are also informed that rapid reduction of temperature in a case of peritonitis appeared to have a similar origin. Of course we must in all such cases make due allowance for the possibility of a *post* and *propter hoc* fallacy and we should certainly exceed every known sanction of science if we were to claim for music a distinctly curative influence in organic lesions. Nevertheless, the fact remains that healthy nerve tone has much to do with tissue nutrition and that music as a recognised agent in its production has thus far a place—albeit a subordinate one—amongst the extra-pharmacopœial remedies available for the purposes of the physician.

PARASITIC ORIGIN OF CANCER.

THE last two sittings of the Pathological Society have been occupied with an interesting discussion on a paper by Mr. Jackson Clarke dealing with the parasitic origin of malignant cancer and sarcomatous diseases. In recent years the evidence on this point has been gradually growing stronger and stronger, and the attention of pathologists has been more and more drawn to the consideration of certain forms of organisms that have been described as present in cancer. Scheuerlen first ascribed the symptoms of irritation to the presence of a bacillus—a bacillus which we now know is frequently met with in the skin and probably plays little part as an active etiological factor in the production of cancer; then more recently it has been supposed (1) that budding fungi, (2) that psorosperms, or some similar parasite, might play a part in setting up the necessary process of irritation in cancer. Now, however, we find an observer coming forward to state that in both cancer and sarcoma an enormous number of spore-bearing organisms and free spores may be demonstrated in every specimen in these malignant growths. He maintains that they are not mere dividing protozoa, but that they are more or less closely related to the spore-bearing psorosperms. Such a contention naturally met with very considerable opposition, as its acceptance is almost equal to postulating that a large proportion of such tumours, hitherto recognised as being degenerated cells, giant cells and invading leucocytes, must be looked upon as being parasitic psorosperms in various stages of development. Whatever the immediate outcome of the discussion may be, it can ultimately lead to nothing but good, as it will necessarily draw the attention of a considerable number of histologists to an aspect of the pathology of malignant disease which, though studied by individual observers, has not yet been generally considered.

THE LATE DR. HAYES AGNEW.

IN the *University Medical Magazine* for February, 1893, is published a Memoir of the late Dr. Hayes Agnew, prepared by Dr. J. William White and read before the College of Physicians of Philadelphia. Dr. White was for many years closely associated with Dr. Agnew in both hospital and private work and had the best opportunities of becoming thoroughly acquainted with him. His highly appreciative memoir will be greatly valued by the large number of surgeons by whom Dr. Agnew's memory will always be cherished.

THE SALE OF STAMPED PROPRIETARY MEDICINES.

AN indication of the importance attached to the decision given in the recent chlorodyne test action is to be found in a circular issued by the executive of the Federation of Grocers' Associations. This circular frankly recognises that it has been decided that no person, not being a properly qualified druggist, can legally sell "poisons;" as a practical outcome a list is given of preparations which have been labeled "poison" and thus come within this decision; it is therefore recommended that they should at once be withdrawn from sale by grocers. The list comprises forty-three articles and includes many sedatives, cough lozenges, syrups and vermin-killers—some with familiar names, a few with titles which give no indication of the purpose for which they may be employed or of their composition. Many are preparations of active poisons which have already been credited with causing many fatalities and we are glad to see that they will no longer be retailed freely by grocers. After this distinct warning from the side of the trade it is to be hoped that the numbers of "misadventures" and "accidents" may be diminished. It is at any rate satisfactory to find that, although leave of appeal against the chlorodyne decision was granted, the members of the trade have not waited longer before taking active steps to minimise the risks to the public and also to themselves.

FOREIGN UNIVERSITY INTELLIGENCE.

Clausenburg.—Dr. Josef Löte has been promoted to the Ordinary Professorship of General Pathology and Therapeutics.—Drs. Engel and Góth have been promoted to Extraordinary Professorships of Midwifery.

Leipsic.—Drs. Lenhartz, Karg, and Döderlein have been appointed Professors.

Tomsk.—The professors and other members of the Scientific Association have contributed several very remarkable papers, which are published in the Transactions of the Association. Great credit is given them in Russian scientific circles for the energetic way in which they have managed to carry on scientific research in a very isolated locality and with a great lack of appliances and assistance. Grave complaints are beginning to make themselves heard of the darkness and unsuitability of the rooms assigned as laboratories. The University building, too, though only five years old, is in a very defective state, large cracks in the walls having made their appearance.

Vienna.—Objections have been raised to the gentlemen proposed for the vacant chair of Medicine on the score of their being foreigners and an effort is being made to get the

appointment filled by an Austrian. For the present the duties of the chair will be undertaken by Dr. F. Kraus, *docent* in Medicine.

SOME little commotion arose at a meeting of the City Commissioners of Sewers on Monday by the reading of a communication from the Thames Conservancy Board in reference to the proposal of the Commission to place a temporary floating hospital on the Thames between London and Southwark bridges. It appears that parties connected with the traffic on the river are strongly opposed to the proposition on account of the problematical danger which might result to the riparian population. In the end the letter was referred to the Sanitary Committee.

AN inquiry was held on Tuesday and Wednesday last by Mr. Hedley and Dr. Downes, Inspectors of the Local Government Board, at Tooting, in reference to the proposal of the Metropolitan Asylums Board to erect an infectious diseases hospital at Tooting Common. The Asylums Board and the opponents of the scheme were respectively represented by counsel. After the examination of several witnesses the inquiry was concluded.

DR. GIUSEPPE LAPPONI has been appointed, by special decree, Archiatro Pontificio (consultant-in-chief to the supreme Pontiff), in succession to Dr. Alessandro Ceccarelli, deceased; and (also in succession to Dr. Ceccarelli) he has been nominated Direttore dell' Ufficio d'Igiene dei Palazzi Apostolici (Sanitary Director of the Vatican and Lateran Palaces and of Castel Gandolfo, the summer residence of the Popes).

THE Port of London Sanitary Authority has just issued by-laws providing for the removal from vessels within the port of persons who shall have been found to be suffering from infectious diseases accounted to be dangerous and a list of which is scheduled. Breach of these by-laws renders the offender liable to a penalty of £5, with a further fine of 40*s.* a day after notice has been given by the authority.

IN our account last week of the annual general meeting of the Royal Medical and Chirurgical Society we omitted to mention that the Fellows, upon the recommendation of the Council, unanimously awarded the Quinquennial Marshall Hall Prize of £80 to Dr. W. R. Gowers for his original work in relation to Diseases of the Nervous System.

IN consequence of the numerous applications for tickets of admission to the Croonian Lecture of the Royal Society, which is to be delivered by Professor R. Virchow at 4.30 P.M. on the 16th inst., it has been decided to hold the meeting in the theatre of the London University, which has been kindly lent for the occasion by the Senate.

DR. THORNE THORNE, C.B., medical officer of the Local Government Board, who has been appointed as a British delegate to the International Sanitary Conference, left London on Tuesday last for Dresden. He will be assisted by Mr. H. Farnall of the Foreign Office. Dr. Thorne, it will be remembered, acted in the same capacity at Paris in 1889.

RAGNIT, in Eastern Prussia, has, says Dalziel's agency, been visited with a malignant epidemic. The plague is daily increasing in intensity and all the schools have been closed.

ON Monday last, March 6th, Sir Joseph Lister was elected a Foreign Associate of the Academy of Sciences of the Institute of France.

LORD SANDHURST, Under-Secretary of State for War, opened the new infirmary at the Royal Arsenal, Woolwich, on the 8th inst.

THE meeting of the British Association next year will be held at Oxford, and will have as its President the Marquis of Salisbury.

Pharmacology and Therapeutics.

METHYLENE BLUE IN MALARIAL FEVER.

METHYLENE BLUE, which had been recommended as a remedy in malarial fever by Guttmann, Ehrlich, Bourdillon and others, has recently been systematically tested by Professor Parenski and Dr. Blatteis of Cracow, who state that in thirty-three cases of malarial fever out of thirty-five a complete cure was obtained by its means. It was administered sometimes by the mouth in the form of powders, six or seven grains being ordered two or three times daily, and sometimes hypodermically, a Pravaz syringeful of a 10 per cent. solution being injected twice a day. These injections caused but little pain and in no case gave rise to suppuration. When given by the stomach vomiting was sometimes produced at first, and if the doses were large, some discomfort in passing urine was experienced, which, however, was readily combated by the simultaneous administration of carbonate of magnesia. Another well-known effect of the drug was to colour the stools blue, while the urine became green and the sputa and perspiration partook somewhat of the same tint. The therapeutic action manifested itself by a beneficial effect on the febrile attacks, on the hypertrophy of the spleen, on the number of plasmodia and on the various symptoms accompanying the fever. The febrile attacks generally ceased after from three to five hypodermic injections; after from three to six doses of methylene blue the spleen rapidly decreased in size, the plasmodia often disappeared from the blood after two or three doses, and the accompanying symptoms such as headache and gastralgia yielded more quickly to methylene blue than to quinine. Dr. Moncorvo has also been employing methylene blue in malaria. In all cases the patients bore the drug well. There was never any diarrhœa, polyuria or albuminuria, as some observers have reported. In one case, however, there was some transitory vesical tenesmus. Dr. Moncorvo remarks that the tastelessness of the aniline derivative has much to recommend it in the case of children, quinine being difficult to administer.

THE MANUFACTURE OF NITRO-BENZOL AND DI-NITRO-BENZOL.

The risks arising in the manufacture and handling of nitro-benzol and di-nitro-benzol and the precautions which should be adopted form the subject of an interesting report to the Secretary of State for the Home Department by Dr. Dupré and Commander Hamilton P. Smith, R.N. Attention has recently been drawn to the subject by various writers, notably by Dr. R. Prosser White, of Wigan. In the report before us, after a brief description of the mode of preparation and the physical properties of the pure substances, Dr. Dupré and Commander Smith state that the ordinary commercial di-nitro-benzol generally contains a greater or lesser amount of impurities, and that these considerably increase the danger incurred in working. This may be because their vapours are poisonous; but it is more probably because the impure, slightly greasy di-nitro-benzol adheres more readily to the fingers and is more easily absorbed through the skin. It is suggested that manufacturers of explosives should, if possible, use only di-nitro-benzol, which is practically free from smell, which produces no greasy stain when rubbed on paper, and which does not sensibly volatilise at ordinary temperatures. Dr. Dupré and Commander Smith are of opinion that although nitro-benzol taken internally acts as a poison, no injury to the health of the workers in the manufacture of nitro-benzol results with the ordinary precaution of sufficient ventilation. Abundant evidence of a negative kind seems to prove that exposure to the fumes of nitro-benzol is not attended with danger. With the di-nitro-benzol, however, they have arrived at very different conclusions, confirmatory of the opinion that this substance is a dangerous poison to workers who handle it or who inhale fumes or dust in places where it forms an ingredient in the manufacture. Masters and men

alike recognise the danger of the fumes in the manufacture of di-nitro-benzol, and the precautions which are accordingly adopted appear to be adequate. The chief danger seems to lie in the fumes of di-nitro-benzol when it is used as an ingredient in the manufacture of explosives and when it is employed by the workers in mines. The precautions recommended consist partly in the careful selection of those who are physically fit for such employment, and they otherwise relate to efficient ventilation and to measures calculated to prevent absorption by the skin or by the respiratory passages. When di-nitro-benzol has to be handled it is advised that the hands shall always be protected from direct contact with it either by the use of indiarubber gloves (kept perfectly clean, especially on the inner side) or by means of rags which can be destroyed after use. The whole report is reassuring in showing that the dangers are fully realised by all concerned in dealing with these substances and that adequate provision is generally adopted to minimise the risks.

CAUTION RESPECTING SULPHATE OF COPPER IN GYNÆCOLOGY.

Sulphate of copper has been strongly recommended as a local application in endometritis by Dr. Dumontpallier, who believes that it is superior to chloride of zinc, as it only produces superficial cauterisation, and according to him has no tendency to cause ultimate atresia of the os. He employs an elongated suppository made of equal parts of sulphate of copper and oatmeal. According to M. Matignon, who recently read a paper on the subject before the Bordeaux Medical Society, sulphate of copper is by no means always so mild in its action as Dr. Dumontpallier believes. In one of his cases, where a suppository containing seven grains and a half of the copper salt was inserted, the patient experienced four days afterwards severe uterine colic and vomiting; a quantity of false membrane was passed, in which microscopical examination showed all the elements of the uterine mucous membrane together with those of the subjacent muscular tissue. This was followed by a very perceptible diminution in the size of the cervical canal and also by a severe inflammatory attack in the uterine appendages. In two other cases where similar treatment was employed there was evidence of the caustic having destroyed the whole thickness of the mucous membrane and part of the muscular coat, some degree of atresia following. Notwithstanding these occasional inconveniences M. Matignon does not suggest that sulphate of copper should be abandoned, as he finds it most useful in leucorrhœa, but he says that not more than three grains and a quarter should be used in the suppository.

ON THE ORGANISATION OF MEDICAL RELIEF IN THE METROPOLIS.

BY F. J. MOUAT, LL.D., M.D. EDIN., F.R.C.S. ENG.

III.

IT was my intention to have examined and analysed every branch of the system of management of the hospitals of the metropolis in the order observed in the able report of the Lords' Committee; but on carefully sifting the voluminous evidence I find that it will be impossible to do so in a reasonable compass, as much of that evidence is of little value, and it would be difficult to elaborate from it a practicable scheme to fit the varying conditions deemed necessary to remove the evils complained of. In the commencement of the report is given a brief outline of the present form of government and financial resources of each of the twelve most important endowed and voluntary hospitals within the area of the inquiry. The pervading principle of action in most of them is an administration by committees, with no authoritative single resident executive chief to deal decisively with each contingency as it arises. The essence of authority in purely executive matters is to be one and indivisible. In some of them the ruling power is a lay treasurer, practically an autocrat, yet nominally subject to the controlling authority of various committees, with no connecting bond of action to secure continuity of procedure, and in which the lay element is so predominant that the trained and skilled professional agency by which the higher work of the institution is performed has no potential voice in its control and government. In noticing the endowed hospitals it must be remembered that they are subject to the conditions of special charters which may possibly in some degree fetter their action and cause the retention of ancient practices which are not in harmony with existing views and circumstances. The records of these institutions, however, do not appear to have been examined by the Committee, and the accounts given by the authorities of each were not subjected to any special scrutiny to verify their accuracy. St. Bartholomew's Hospital has a governing body of 273 members, self elected, with elaborate machinery for its management, in the real control of which its distinguished medical staff appears to have no place. The highest authority is the treasurer, who is non-resident, and, although a most able and distinguished administrator, can scarcely have sufficient time for the thorough discharge of the important and onerous duties assigned to his office. At St. Thomas's Hospital the principal officers (apart from the medical and nursing staff) are a resident treasurer, who is the head of the institution, a receiver and a steward. There is a medical committee, comprising the medical staff, which meets once a week as a rule. All matters connected with the school come before them, and they recommend students to the treasurer and almoner for appointment to offices in the hospital. There is also a house committee, on which there are two retired medical officers on the consulting staff, together with the dean and senior physician and surgeon, who attend as consultants, but are not members of the committee. In the administrative government of this great hospital and school the professional staff has no real power.

Their lordships have pronounced it to be one of the model hospitals of the world—a view that is not generally taken by those who have spoken with authority on the subject. It is magnificent in its palatial construction and arrangement, but in this and other respects is more rightly regarded as a model to avoid than to imitate. In fact, the most recent leading hospitals of London and Paris are the greatest failures of our time; but, as this is the only point of hospital construction noticed by the Committee, it is not necessary to go further into the matter. Palaces are not required for the sick poor, more especially since the practical extinction of hospitalism in surgery by the discoveries of Lister and in medicine, scarcely in a minor degree, by the labours of Pasteur and others. Guy's Hospital is exceptional in many ways; and although it has a resident medical superintendent he has no strictly medical duties to perform, his function being to act as an aid to the treasurer. With an income considerably reduced by the lowered value of its landed property it has still an annual command of £26,000, with which it is unable to fill its beds, and therefore some short time since raised £100,000 apparently to enable it to do so. This sum is employed in instalments for its current wants, and might, I venture to think, have been more profitably used in adding to its permanent resources. It has likewise paying patients and a small addition to its funds by a trifling fee levied on out-door patients. It is in reality under the control of an able resident treasurer, who has several consultative committees to assist him in its management, but in practice his authority is absolute, and his views, as contained in his evidence, have been moulded in an entirely different and higher sphere of action.

Apparently with a view to remedy some of the anomalies of management, and considering the power entrusted to the treasurers to be too great, the Committee suggest that "in all these endowed hospitals the government should be carried on by a system of weekly boards and subcommittees," a proceeding which may possibly mitigate some of the defects of the existing system of control, but does not touch the root of the evil.

One or two examples of the manner in which matters are managed in some of the voluntary general hospitals will be sufficient to indicate the procedure of the whole of them, as the principle of action is very much the same, and the variations mere details adapted to local circumstances. At King's College Hospital the secretary, who is also at present the chaplain and warden and is non-resident, is the head officer and has supreme controlling authority in the absence of a committee of management of twenty-four governors elected at the annual court. Of this committee the Principal of King's College Hospital and the treasurer are official members, and some members of the medical staff are always on it. There is also a medical committee of the whole staff, who are said in general to take no active part in the management. There is a variety of other committees for

the detailed work. There is no resident medical or other superintendent, and the chairman of the managing committee was of opinion that much opposition would be offered to such an appointment. At the Charing-cross Hospital, which is in financial difficulties, the daily management is in the hands of the secretary, who is non-resident, but the chaplain is the highest resident officer, and either of them would in any serious emergency refer to one of the treasurers. At the Westminster Hospital the secretary has a general control over the establishment, but the precise limits of his authority are not strictly defined. Both he and the chaplain are non-resident, and there is no resident medical superintendent. There are several committees for detailed duties.

The above are sufficient to show that the chief routine work of these institutions is performed by committees, and that the principles of procedure and action are very much the same in all. The medical staffs have little or no control over the management, and there is in no case a single responsible resident medical officer with full power, as in the Poor-law infirmaries, to control and direct, subject to official inspection and audit and to the supreme authority of the guardians of the district. There is no reason to doubt that most, if not all, of these numerous and varied committees do their work fairly well, but the absence of all direct and immediate personal responsibility is, I think, fatal to thoroughly efficient control and economical management, which latter appears to me to demand more attention than it receives, otherwise there would not be such extensive differences in the cost of the same class of work, as Mr. Burdett has shown in his most useful writings on the subject. Outside all these conditions, important as they are, is the fact that the primary function of all hospitals is the successful treatment of disease in the widest sense of the word, and the collateral and contingent benefits to the poor of which they are such beneficial agents. To this all other relations, scientific and administrative, should be absolutely subordinated.

What, then, are the cardinal conditions which ought to be observed in the executive management of all hospitals to extract the largest amount of benefit from them, in their important relations to the public and to the profession most immediately concerned in their efficiency? The question is very old and was thus answered by Sir William Blizard a century since. "The value of medical science in every walk of life, independently of its application in preventing and curing disease, should be seriously considered. All men are indebted to the discoverers and cultivators of natural truths for some share of their useful knowledge and of the felicity they enjoy. Many, therefore, are the objects interesting to society that present themselves in contemplating the professional concerns of a hospital; and, as in commercial and other affairs, they will be best understood by those who have most devoted their time and attention to the subject. Every thing liberal may be expected where charity is the governing principle of action, and where the good done bears proportion to the degree of knowledge exercised. Purity of motive, sincerity of attention in the surgeons, will not then be doubted. It may not, however, be improper to observe that their credit and interest are involved in all the proceedings of a hospital, for its prosperity is their interest, its depression their loss and regret."

I need not point the moral to show how injurious I consider the position occupied by the medical profession in the hospitals of London to be. The Committee whose report I am considering express disapproval of the manner of government of the endowed hospitals, and suggest a remedy which does not appear to me to be calculated to mend matters materially. Indeed, as it is tolerably certain to be objected to by those immediately concerned, it may operate injuriously in destroying the very small amount of direct personal responsibility at present in force in these institutions. As to the voluntary hospitals mentioned in the report, it was said that the systems of management greatly resembled each other, and that the evidence showed them to be generally well administered. This is doubtless correct as respects the limited scope of the inquisition, but as no records were examined, no institutions visited, and none of the scientific results ascertained or recorded it must be accepted with some reserve. What appears to me to be really required is unity of executive control in skilled professional hands, under efficient administrative supervision by properly organised committees of each institution to preserve their autonomy, added to independent inspection and audit, and all this can only be obtained by a radical change of system. This I shall endeavour to show in relation to the present unequal distribution of the general hospitals of London, the total absence of all coöperation on the part of the institutions devoted to the care and treatment of the sick poor, the formation of a central board of supervision, the grouping of the hospitals in the different centres of the population of London, the federation of the clinical system, and the publication annually of a uniform system of accounts and of medical statistics, by which latter alone can the character and quality of the professional work performed be properly gauged.

The next subject referred to by the Committee is that of the admission of patients to the voluntary general hospitals—a very serious consideration to the sick poor, for whom all such places were originally established, and for whom they are still chiefly intended. Viewed from the standpoint of charity, the more recent guiding principle of admission is a distinct departure from that intention and purpose. The procuring of subscribers' letters, although said to be very little resorted to now, and never so as to interfere injuriously with serious cases seeking admission at the same time, may be true, but it is a practice which ought nevertheless to be discontinued. It is a sort of benevolence which is inconsistent with true charity, from its great liability to abuse. When exercised, it can seldom be with the care and attention necessary to prevent its being bestowed upon some, at least, who are not objects of charity, and thus deprive others of beds who have a better claim to them.

If the admission of patients is faulty, still more so is their discharge, not only before cure, but when medicine has done little or nothing for them. To compel them at such a time to seek a refuge in the Poor-law infirmaries, which they had endeavoured to avoid by entering a voluntary hospital, I cannot but consider a cruel proceeding, and one for which there is no valid plea of justification. To make way for a more interesting case or in any other way to subserve the interests of the institution to the manifest detriment of the sick I look upon as unjustifiable, and amongst the practices which are regarded by the French as inhuman in our system. Another proceeding of a similar character is, I think, almost as objectionable—viz., fixed days for admissions and discharges. These practices are, I believe, largely due to the operation of the voluntary system, inasmuch as in very many appeals for fresh subscriptions or funds urgently needed the large amount of cases treated is urged as a strong claim for more pecuniary aid. This is no test of the value of the work done or for determining its merits, as it would falsify the statistics of the institution were they prepared and published as they ought to be. MM. Blondin and Sere, in contrasting the procedure of the two nations and particularising the peculiarities of the voluntary system, observe that English measures of relief are controlled to a great extent by the privileges of subscribers and donors and the sources generally of their incomes, whilst those of France are aimed only at providing the most complete succour and thus effecting the greatest possible good with it. The discharges from French hospitals are regulated with special care, to prevent the abuse of the resources of the hospital without prejudice to cases which need more prolonged care before discharge or transfer to one of the State convalescent asylums. I am of opinion that the imperfections of our system are susceptible of amendment by reconciling private and public charity in relation to disabling sickness where that is the cause of the temporary poverty that drives many honest persons to seek relief in institutions to which no civil disabilities are attached.

The last branch of this portion of the report of the Select Committee is the out-patient system, which has excited so much attention, and in which such extreme divergence of opinion existed. This divergence was so marked and most of the views so impossible to reconcile as to cause the Committee to formulate and discuss each of the contentions for and against the system in force. To consider these in detail, with the hope of extracting from them any leading principles to guide us in producing a complete working scheme, would, I think, be an unprofitable task, even were it practicable. The main objections entertained were, I think, established—viz., that either as instruments of relief or as measures of medical training the overwhelming numbers who crowded the out-patient rooms rendered the whole proceeding one of questionable value, even when not used for purposes of inflation, as baits for subscriptions; as injurious to the sick from hasty examinations, incorrect diagnoses, or erroneous treatment; as characterised by want of discriminating persons able to pay for treatment; as stifling pro-

vident dispensaries in their vicinity; and as interfering injuriously with the rights of general practitioners, whose practice is chiefly amongst the classes who resort most to the out-patients' department. There were other objections stated which do not require special mention.

That an out-patient department is absolutely necessary for the success of a hospital and that its absence would amount to a national calamity can scarcely be accepted as correct when as an instrument either of relief or instruction it is in general use in no other country than our own. Elsewhere—in Edinburgh, for example, and in some of the hospitals of the United States—there is no difficulty in filling wards with suitable cases for clinical or other purposes and in giving relief in attacks of disease which do not need hospital in-door treatment. In those countries and places as complete and scientific a medical training as in our own is afforded without the aid of such an institution. In Paris, where I have seen the practice in use, the manner in which admissions are dealt with by the Assistance Publique is far more satisfactory and complete than our own, and I have worked a system myself in a dispensary, as a source of supply to the great hospital of which I was then first physician, with perfect success. The other extreme view submitted to the Committee, that an out-patient department is absolutely useless, cannot be accepted by anyone who has a practical knowledge of the matter.

Since the professional inquiry of 1870 some amendment has been effected by restricting the numbers admitted to out-door departments and by the adoption of somewhat better means of eliminating those who have no business to find their way there; but I fear that these palliative measures will not cure the evil. The general practitioners and dispensaries are both, I think, injuriously affected by the competition of the hospitals, and I see little prospect of this being amended until the whole question of hospital management, medical education and relief of sickness connected with it are placed on a different footing, as parts of a general scheme of reorganisation. This, should it ever be accomplished, as it doubtless will in time, will need careful inquiry respecting each institution which now has a separate and uncontrolled existence. All that appears to me to be necessary at present is to ascertain what may, after due consideration, be ultimately required, and what portions of it can be effected at once with as little interference as possible with the *status quo*. The problem has been partially solved as respects the poor by the Metropolitan Poor-law Act of 1867 and the Medical Relief Disqualification Act of 1885. The extension of the principle of the latter to the Poor-law infirmaries would at once provide all the in-door medical relief in acute disease needed for those temporarily disabled by sickness, that is required for London. In the voluntary hospitals and all dispensaries what is practicable at once without disturbing their autonomy is the introduction of a uniform system of record of their work, an independent audit of their accounts, and skilled inspection under the authority of a central board, which all are said to desire, but none appear ready to welcome. Once established on a satisfactory footing, if worked with care and discrimination, it would soon acquire such a knowledge of defects and imperfections as to lead to their correction without any violent interference with vested rights and cherished sentiments.

Want of coöperation.—The absence of coöperation between the general hospitals, the dispensaries, the Poor-law infirmaries and the private practitioners affected by them was so well apprehended and stated by the Committee that I here reproduce their remarks in their own words:

"So far from there being at the present time any general system of combination or any definite division of work amongst the various institutions, they are, on the contrary, for the most part competing with one another at every point for public support, and to a great extent for patients. This condition of things is shown to be wasteful as regards subscriptions of the public, and prejudicial, not only to the public who subscribe their money, and to the sick, for whom the institutions exist, but also to the interest of medical science and education, since a wide field for observation and practice is closed to the clinical teacher and his pupils, whilst the hospitals for the sake of their schools, lest the requisite material should fail, are driven to take in and treat a crowd of patients unsuitable for hospital treatment, and the general practitioner complains that he is being ruined." The above are the evils of the present system, or want of system, but little has been done heretofore to cure, to remedy or remove them. A few feeble attempts were made in the direction of combined action, but they all failed, as might be expected, since isolated efforts would be of no value in such a matter. The true method of dealing with it was formulated by Sir T. Fowell Buxton in 1878, who wrote in a remarkable letter to *The Times* as follows:—

"From a long acquaintance with hospital management I am convinced that its principal defects both in London and the country arise from want of organisation and coöperation and from the absence of all central control and of Government inspection. If the hospital system were complete, each central hospital would be surrounded by its satellites of dispensaries, cottage hospitals, special hospitals, convalescent hospitals, convalescent homes &c., which would intercept numberless cases which otherwise burden the wards of the hospital, and would furnish advanced education for the pupils of its school. Without some such authority as is possessed by School Boards it is impossible to organise such a body as this or to promote the scientific training of nurses. I do not believe that hospitals, upon which the demands increase year by year, can much longer keep pace with the requirements of modern medical practice or the precarious support of voluntary contributions, and I earnestly hope that Parliament will take the matter in hand before it is forced upon its notice by the collapse of some important institutions." No coöperation of any kind can be expected in existing circumstances or by voluntary efforts. The authority of the State, therefore, is necessary to inaugurate such a movement, and however unacceptable it may be in the first instance, it will soon be perceived that it was required in the public interests.

To what extent, then, should the State interfere in the matter without detriment to the autonomy of any of the voluntary hospitals or dispensaries? It should, I am of opinion, neither possess nor exercise any power of direct interference with local action, all control and immediate management being placed entirely in the hands of those in whom the direction of the institution is placed, either by selection, election, or any other manner in which these appointments are at present made. But it should, I submit, both possess and exercise authority to cause all such institutions to be inspected periodically by some independent agency to see that all rules and regulations for their management are carefully observed, that their books and records are properly kept, that proper facilities for admission and treatment are afforded, and that the funds from whatever source obtained are not wasted by needless extravagance, either for building or management, or in the maintenance of the schools attached to some of the hospitals, which latter should all be self-supporting. The inspector should invariably be accompanied by the resident controlling authority of the institution, to explain all matters that may need explanation and to afford any information the inspector may deem it necessary to call for. There should be nothing inquisitorial or calculated to interfere with local action or diminish personal responsibility in this inspection, the result of which should be duly reported to whatever central body may be created and appointed hereafter for consideration and action when any action may be required—such action being assigned with their consent to the authorities of the hospital convened. At one of the conferences held in London the voluntary hospitals were defined to be "private associations performing public duties," and this being admitted, a public duty involves a public responsibility for its due and proper performance. This is a principle applied to many institutions of a more strictly private character than voluntary hospitals, such as lunatic asylums, mines, factories, *et id genus omne*, and in none is it more imperatively needed than in our voluntary hospitals, for in the general hospitals of that class are contained the most helpless of all classes of the poor—the sick poor. They assuredly ought not to be left to the instability of precarious and uncertain charity, of which the plaintive and pitiful cry of "funds urgently required and beds unoccupied for want of funds" is constantly heard, proving how great are the present pressure and breakdown.

The moderate amount of public control suggested will probably be met with the customary contention of its checking the free exercise of the judgment of the practitioner in the treatment of disease, of diminishing his personal responsibility in the momentous issues of life and death, and of interfering with that liberty of action which induces us to tolerate all sorts of abuses, many of them the outcome of the perverted sentimentality which is one of the most regrettable reproaches of the present time. The most serious obstacles will be the belief that when the State steps in to supervise the

general management of the hospitals the public will lose their chief interest in those institutions, that their subscribers and supporters would fall away, and that the working classes would cease to exercise thrift in providing against sickness, even to the extent to which they now practise it in becoming members of sick clubs and friendly societies. I hope and believe that this would not be the case. There is not the same indisposition to resort to a hospital that there is to enter a workhouse, and if they were assured of timely aid when it is needed and welcome, without wasting hours, and sometimes days, in endeavouring to procure subscribers' letters, they would soon learn to contribute to its maintenance as a harbour of refuge in their own hour of trial. It is also, in my opinion, an absolute delusion to imagine that our most intelligent artisans, and even those lower in the social scale than themselves, are not alive to their own interests, or that they are possessed of erroneous notions of social economy in relation to their immediate surroundings. It is the class immediately above them who appear to crowd the out-patient department and apply for in-door relief; and what can be more demoralising and destructive of every feeling of self-restraint and self-respect than those seeking gratuitous medical aid under a false pretence of poverty?

It would, I think, be an undeserved reflection upon those better off in the world to suppose that they would close their hearts and their purse-strings to appeals properly prepared on behalf of the hospitals, even if a part of the burden of support were borne by the community at large through the agency of the State. The really unselfish and benevolent are the few; the selfish and indifferent are the many. The whole cost of maintenance falls upon the former. Any plan then that would distribute the duty fairly among all bound to contribute to it in a manner which admits of no evasion would enable the really charitable to continue their present efforts with a better chance of success than now obtains. There will always remain a wide margin of distress which no public agency can touch, and which must for ever remain the privilege of those whose ears are always open to the cry of anguish, and whose hearts are moved to its relief by the agency of personal sympathy and support.

In my next communication I propose to deal with the question of coöperation from the scientific side.

CHOLERA.

THE absence of news about any extensive prevalence of this disease at the present time is satisfactory. That it still prevails, however, to some extent in Russia is no doubt true, but no official statements or reports have reached us since those published in the *Official Gazette*, to which we referred last week, as to there being signs of its wide diffusion in that country or of its presence in frontier provinces like Podolia and Kieff.

As regards the Dresden International Conference, some political difficulty has, it appears, arisen in Roumania owing to the action of Austria and Russia in insisting that the question of the Danube ports quarantine regulations shall be discussed. Roumania is very sensitive about her rights on the Danube, and the Roumanian Government have urged that its position and jurisdiction in regard to these quarantine regulations should be finally settled first of all. The matters to be discussed at the Conference are of international interest and for the welfare of all in common, and it is therefore highly probable that a satisfactory understanding will be arrived at and that all the Powers interested—as they all are—will take part in the Congress.

CHOLERA IN FRANCE.

(FROM OUR SPECIAL CORRESPONDENT.)

A VISIT TO PORTEL.

English Visitors at Boulogne.—Tourists at Portel.—Resistance to Sanitary Measures.—Contamination of Wells and Streets.—High Cholera Mortality.

THERE is probably no town outside England better known to the English than Boulogne-sur-Mer. The number of English visitors and residents at this agreeable sea-bathing station is exceptional. The town is within an hour's railway journey of Calais, and *viâ* Folkestone is less than five hours' journey from London. Communications between London and Boulogne are frequent and easy. The Londoner who spends his holiday at Boulogne can enjoy the advantage of going abroad whilst incurring but little trouble or expense and remaining within easy reach of London. This, combined with the attractions of the picturesque old town, the Casino, and the magnificent sands, contribute to render Boulogne the most popular French bathing place for English visitors. It would therefore prove a matter of more than usual concern should a severe cholera epidemic break out there. Unfortunately Boulogne has not been exempt from some cases of cholera, and at Portel, which may be considered one of its suburbs, there has been a very severe epidemic. Portel is a picturesque village on the coast, little more than three miles from Boulogne. Indeed, with the exception of a distance of about 500 yards, the whole of the road from Boulogne to Portel is lined with houses. The connexion between the two places is the closer from the fact that Boulogne is the port for Portel and the majority of the inhabitants of the latter place are engaged in fishing. The Portel fishing smacks bring their fish to the Boulogne harbour, and the Portel fishwives meet the boats and help to unload them. The road between Portel and Boulogne is peopled with the fishing population going backwards and forwards from their boats in the Boulogne harbour to their homes at Portel. It was therefore a very serious matter for Boulogne when cholera broke out at Portel. Many of the visitors to the former make excursions to the latter place. Portel has a fine beach surrounded by high cliffs. Here the bathing is free, a fact which does not fail to attract a good many people. A few families come and spend their summer holidays at Portel, where the cost of living is much cheaper than at Boulogne and where lodgings of a very modest description can be found in the houses of some of the inhabitants. Most of the houses are more like cottages, having but one or occasionally two storeys. They are whitewashed, but often colour is mixed with the whitewash, so that there are light blue, green, yellow and brown houses, all of them enlivened with very bright green shutters. The roofs are tall, of red tile, with attic windows, and the houses have very frequently but one floor, the ground floor, unless there be a cellar, though it is difficult to account for such cellars, as land is cheap and it would be much better to build the houses a storey higher. Still, there are cellars, and these are not only used for lumber &c., but are sometimes inhabited. The beach is reached by steps cut in the rock or by a winding footway which follows a stream or small torrent that debouches into the sea in the centre of the little bay where the sand has accumulated. On all sides gutters converge upon the beach or into this stream. The declivities are steep and the water rushes along the gutters bearing to the sea rubbish of all sorts, fragments of fish and vegetables, soapsuds and the fresh blood and offal from small private slaughterhouses. Children are to be seen in all directions, playing on the sandy soil of the streets and floating paper boats in the dirty gutters. The first case of cholera is stated to have occurred on Sept. 17th, 1892, and the victim was a child only four months old. The second case was also that of a child, a girl nearly three years old. There had been no cholera at Portel since 1848, and many different theories were propounded to explain the recent epidemic. According to one theory the cholera was imported from Ostend, where a woman from Portel had been to fetch two of her children. Her husband was taken ill, as also were a friend and neighbour. The neighbour, the weaker man of the two, died first; but this did not occur till a fortnight after the two children had returned from Ostend. There was, however, far more cholera at Paris than at Ostend; and, if two children came from Ostend, there were several hundred visitors who came from Paris. Apart from the few persons who spend their holidays at Portel, omnibuses travel backwards and forwards daily and frequently between Boulogne and Portel. Excursionists from Paris to Boulogne profit by these omnibuses to visit Portel, where they can enjoy, free of cost, a dip in the sea. Out of these hundreds of visitors it is more than probable that one or more were attacked by choleraic diarrhœa whilst at Portel. The same doubtless also occurred at Boulogne, but then Boulogne is a better drained town. At Portel some of the houses have porous cesspools—*bétoires*—so built as to allow their contents to escape into the subsoil. Other houses have only small pails, which are occasionally emptied into the sea. But a great many houses have neither *bétoires* nor pails: they simply throw

their night-soil out into the street or on to the nearest heap of rubbish. Thus the dejections of a visitor from Paris, or some other infected locality, suffering from a mild attack of cholera might very easily have been mixed with the sand and earth of the street, where the children play about. If the soil of the streets was contaminated it was natural that the children playing and rolling about in the streets should be the first victims. The total absence of sewers, the frequent influx of visitors when cholera prevailed in so many ports of France, the throwing out of dejecta into the streets that constitute the playground of children, these facts alone suffice to account for the outbreak of cholera.

The epidemic having once begun, its rapid spread and disastrous effects can with equal facility be explained. First, there was the usual attempt at concealment, then a most determined resistance to all prophylactic measures. There are also a great number of very poor and intemperate people, and of course they were the principal sufferers. Yet some of the cleaner and wealthier sections of the population likewise suffered. One rather interesting case is that of a woman aged thirty-eight years and her child aged five years. Both died from cholera. The woman was strong, very clean and healthy, and lived in a good, well-kept house. This woman was, however, a thorough miser, and though possessing ample means could never be induced to spend sufficient money on the purchase of food. Then there is the case of a very healthy, robust man aged forty-two. At two o'clock one afternoon he helped to carry a body and bury a woman who had died from cholera; at eight o'clock the next evening he himself died from the same disease. The linen of a woman who had died from cholera was washed on a Sunday morning at eight o'clock by a woman aged twenty-two years, of robust health, and whom the mayor described to me as being "built like a wall." In the afternoon this woman was seized with violent vomiting and she died on the day following at 4 P.M. The linen she washed had not been disinfected; the apparatus for disinfection had not yet been sent to Portel.

When it became known that cholera had broken out at Portel, the Minister of the Interior gave orders that a portable stove for disinfection by steam superheated under pressure should at once be sent to that place, and as there is no hospital available in the district a Tollet ambulance tent was also lent by the Government. These tents, resting on Gothic-shaped iron arches, make very strong portable hospitals that will resist the wind even when blowing very strongly. Instead, however, of considering themselves fortunate in the possession of an isolation hospital, the inhabitants of Portel gathered in force and threatened to destroy the ambulance. Gendarmes had to be employed to protect the men who were engaged in putting up the field hospital. When this work was accomplished not one of the numerous patients would consent to allow himself to be taken to the hospital thus provided. As the mayor would not assume the responsibility of ordering the forcible removal of the patients the tent was of no use whatever, and it was subsequently removed to the neighbouring village of St. Étienne. Cholera had reached this village, and its inhabitants, less superstitious, less ignorant and prejudiced than the fishermen of Portel, gladly availed themselves of the tent hospital, and it there proved of great use in preventing the spread of the disease.

The Commission of Hygiene of the Boulogne arrondissement met and urged that all the wells at Portel should be closed. These are mere surface wells and are all exposed to contamination. The municipality of Boulogne offered to supply water to Portel gratuitously if the municipality of the place would go to the expense of sending horses to fetch the water-carts from Boulogne; but the people of Portel would not listen to this offer. They strongly objected to incurring any expense and, above all, would not allow their wells to be closed. The sub-prefect, with the "doctor for epidemics," and a posse of gendarmes to protect them, went to Portel and forcibly carried away the piston-rods of the pumps connected with the wells that were most likely to be contaminated; but two or three days afterwards the people removed the stones covering the wells and, with ropes and buckets, got water out of them. So little was the danger of drinking well-water understood that the mayor of Portel was about to issue a proclamation to his electors explaining that he was not responsible for the closing of the wells. Fortunately the sub-prefect heard of this in time to explain to the mayor that it was his duty to strengthen the moral authority of the Government and not to appear as if he disapproved of what had been done. Notwithstanding the resistance and ill-will of the inhabitants of Portel, a great deal was done on their behalf, and the mayor expressed to me personally the gratitude he felt, and was anxious that public attention should be called to the devotion shown by outsiders. Thus Dr. Ovion, "doctor for epidemics," came repeatedly from Boulogne and went bravely into the foulest dens to attend the sick. Dr. Houzel also came from Boulogne, and both these gentlemen worked very hard and gratuitously. The Minister of the Interior despatched Dr. Pierre Aymard and Dr. Girocle, and two Sisters of the Bon Secours Order were also sent. Day and night the Sisters nursed the sick in their dirty, ill-ventilated cottages, exposing themselves to every risk of contagion and showing the greatest self-denial. Sulphate of copper in large quantities was distributed gratuitously, and many things—furniture, bedding &c.—likely to be contaminated were burnt. The rooms were disinfected by being stripped of their paper and, when quite bare, were washed with mercurial and carbolic acid solutions; yet in one particular house cholera broke out three different times, though on each occasion the premises had been very carefully disinfected. This seems to be exceptional. I had not before heard complaints of cholera breaking out again in a house that had been carefully disinfected; but the whole village was so thoroughly infected that it is easy to conceive how the specific germs might be carried again and again into a house, however carefully it might have been cleaned.

Of course, I made a point of visiting some of the houses where the greatest number of cases of cholera had occurred. Thus, in the Rue Victor Hugo I entered a house where a good many had occurred. In spite of all the disinfecting and all the cleaning I found the backyard of this cottage flooded with water in which rubbish and fæcal matter were floating. There was no closet, no pail, no sanitary convenience whatever. The paper on the wall of the sitting-room had dropped off in consequence of the damp, due, in a measure, to the chronic flooding of the back yard. In the Rue du Puits I came upon one of the principal wells of the town. There was a pump, and immediately below the pump was a square stone with a circular one fitted in the centre. A hole in the middle of the latter enabled a hook or the fingers to be inserted. The stone could thus be raised and direct access obtained to the water beneath. At the same time, through this same hole, dust, mud and water from the street could drop into the drinking-water below; but, worse than this, people came with dirty utensils, pails and so forth, and washed and rinsed them out upon the stone with the water from the pump. It will be easily understood that the well-water would thus be contaminated, and in a most dangerous and filthy manner; thus armed force had to be employed to prevent people drinking this water. In another very wretched house I found a mother with twin children, who were literally dying from starvation. The father had been carried away by cholera, leaving a widow and four children. The five slept and lived together in one very small damp room. A drain from the back yard to the gutter in front passed under this room and was very offensive. A little further on I found a row of houses built on a level, though the street rose; the houses at one end of the row were consequently some four or five feet below the street. A space in front of these houses had been made to give access to the doors; but, being below the level of the street, this sort of front yard or area could not be drained and there was a pool of green, stagnant, foul water. In a court a house was shown to me where two deaths had occurred; a wall in front of the dwelling-room blocked out the light, and in the passage leading to the dwelling there were water, offal and fæcal matter which befouled the atmosphere. In another house near the beach, which used to be a *café*, there had been four cases and three deaths. The place was gloomy, with a stifling atmosphere, and this in spite of recent disinfection. Finally, I entered a cellar dwelling. It seemed more like a cave than a cellar. A wretched man, his wife and several children lived in this hole. The few sticks of furniture stood on the bare earth, as also did their bed, which was placed in a distant dark corner. It was only the front part of this cave that received a little light and air from the street. For this wretched home these people paid only 2*s.* 10*d.* per month. This is a small enough sum, and they certainly could not expect good accommodation for such a price; but the question is whether people who cannot afford for a whole

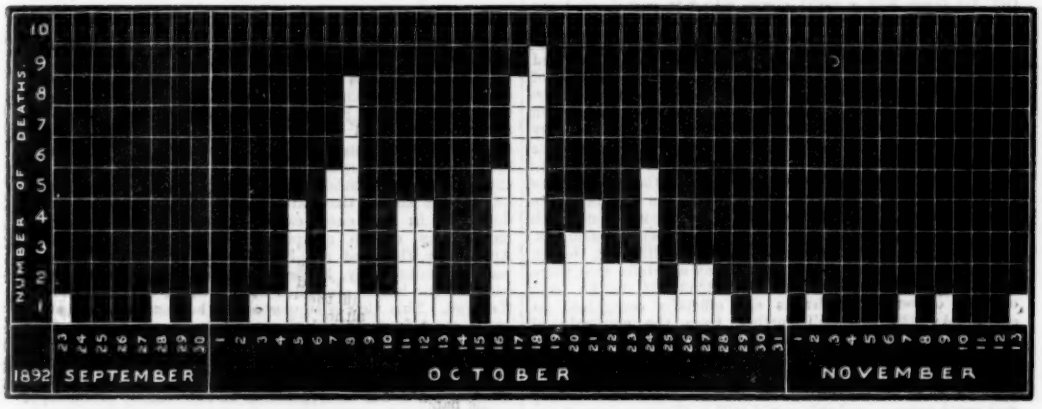
family more than about 3s. a month for rent ought to be allowed to live anywhere outside asylums, poor-houses, workhouses, or such institutions Landlords should be compelled to provide wholesome tenements, but tenants should be able to pay a reasonable rent. Till this condition is attained there never will be perfect sanitation.

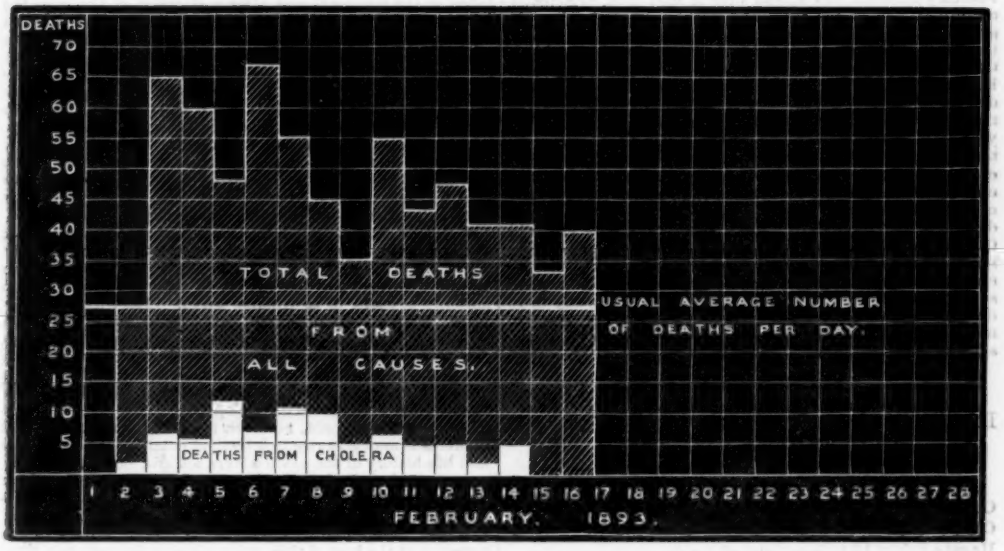
It is difficult to say how many cases of cholera there were at Portel, as so many persons concealed the fact of their being ill. However, 130 cases are known to have occurred, and there were 76 deaths. Considering that the population of Portel only numbers 5329, according to the last census, it will be seen that the epidemic was severe. The average number of deaths for the last ten years at Portel was 103 per annum. Dr. Aymard, the Government delegate, the mayor assured me, had made this calculation, and it would equal a death-rate of 20·2 per 1000 per annum; but the death-rate from cholera alone during the recent epidemic amounted to 14·26 per 1000 of the population. The Portel epidemic may therefore be considered as one of the most severe that occurred in France during the course of last year. Doubtless it would have been even more severe but for the fact that energetic disinfection was enforced, and that the town is exposed to the purifying and health-imparting sea breezes.

MARSEILLES.

The Cholera in October, 1892.—The Cholera in February, 1893.—Remarkable Contrast between the Two Epidemics.

Mystery hangs over the cholera at Marseilles. A great deal of unnecessary word-fencing is indulged in that may mislead the casual inquirer, but which, as far as I have been able to judge, tends rather to exaggerate than to mitigate the evil. If anyone speaks of cholera he is authoritatively told at the Municipalité, as at the Préfecture, that there is no cholera epidemic. Then insinuations, sometimes not altogether pleasant, are made that the cholera has been invented by foreigners anxious to promote the commercial interests of other nations to the detriment of the port of Marseilles. Yet it is now freely admitted that there was cholera at Marseilles last October, but great efforts are made to conceal the fact that there has been cholera at Marseilles during the month of February this year. Because the number of deaths has not been considerable, therefore the existence of an epidemic is denied. Then there is the practice of qualifying deaths as "suspect." There are, however, a few hygienists at Marseilles who care more for saving human life than for playing with words in the hope that foreign Governments will not take measures against ships'





coming from Marseilles. I was therefore able to obtain the accompanying diagrams. The first represents by squares the number of deaths occurring each day during the months of September, October and November last year. The figures possessed at the Ministry of the Interior in Paris show that there were four deaths in September, eighty-two in October and four in November, and there is scarcely any difference between these figures and those of the diagram. Whilst these cases of cholera occurred in October there was a decrease in the general mortality. Most of the victims lived in the lower part of the town, especially in the narrow streets by the old port, which had suffered so much during the great epidemics of 1884 and 1885. The epidemic was spread over a period of fifty to sixty days, and on Oct. 1st there was a great storm, which in part flooded the lower portion of the town. This year, on the contrary, the weather has been exceptionally dry. The rainfall for January was only 16 millimetres, or a third of the normal rainfall. In 1892 there fell 52 millimetres of rain in the same month. The epidemic commenced on Feb. 2nd and seems to have ceased on Feb. 15th. On Feb. 21st there had been another death, about which doubts were entertained. In any case, the epidemic of February has proved to be a little more severe than that of October last; for I am informed, on the best authority, that there have been 102 deaths. The accompanying diagram does not quite correspond with these figures, but it does correspond with the figures given by the Prefecture to the foreign consulates. In the latter case the distribution by date is different, though the total is the same. From this I may conclude that there have been from Feb. 2nd to Feb. 22nd 102 deaths from cholera, of which 87 deaths are officially recognised as such. As differing still further from the epidemic of October last, the accompanying diagram shows that the general mortality was much higher than usual. As a rule, there die close upon thirty persons per day in Marseilles, but the number of deaths during the first fortnight in February was much greater, and this would still be the case even if one were to deduct the deaths from cholera. Finally, the February epidemic was spread over a vast area, principally on the outskirts of the town and on comparatively elevated ground. It seems, therefore, to have been in many important respects very different from the epidemic of October; and both the epidemics of October, 1892, and February, 1893, differ very considerably from the great epidemics of 1884 and 1885. This latter circumstance gives rise to the hope that there will be no serious epidemic this year. Dr. Mirrer, who is one of the leading authorities on this question and has very elaborately studied the previous epidemics, urged, when discussing the matter with me, that cholera at Marseilles always begins with a few isolated cases and then suddenly developes, a large number of deaths taking place daily. This was not the case either in October or in February, and therefore he hopes that Marseilles is not at the present time especially susceptible to cholera; otherwise, why should the epidemic have stopped so soon and caused so little damage? It is ardently to be desired that this somewhat sanguine view of the situation may be verified by the course of future events; but the summer is coming and Marseilles is abominably dirty.

INTESTINAL PARASITES BELONGING TO THE CLASS NEMATODA.

THREE lectures on this subject were delivered at the Royal College of Surgeons on Feb. 20th, 22nd and 24th, by Dr. H. J. Campbell, Senior Demonstrator of Biology at Guy's Hospital. He gave a short historic account of the views concerning intestinal parasites, which was followed by a brief description of the general anatomy of the nematodes. A general review of the life histories of the parasitic species was then given. First, those forms which are only occasionally parasitic, being free living animals for the greater part of their lives, were mentioned; after which came a description of those species which pass their larval stages in damp earth or water, but which must gain admittance to the intestine of an animal before they can grow up into sexually mature adults. Next those forms were described which are obliged to pass their larval condition in the bodies of intermediate hosts in order to reach the stage of development which is necessary if they are to grow up into adults in the intestines of their final hosts. Fourthly, mention was made of some species which show an alteration of generations; as a rule, in these cases, the intestinal parasite produces by parthenogenesis young animals which grow up outside the body of the host into sexually mature adults; these, in their turn, give rise to embryos, which, after they have been swallowed by their host, develop into another asexual generation. Finally came the species which pass the whole of their lives inside the bodies of their hosts, and which in consequence neither require any intermediate host for their development nor are free living for any portion of their lives, but whose eggs are able to develop into mature adults in the bodies of their hosts, even if they are swallowed immediately after they have been passed.

The second lecture commenced with a description of the ascaris lumbricoides, the experiments of Grassi and Lutz, by means of which it was conclusively proved that no intermediate host is necessary for the development of this parasite, being described at some length. It appears, from the results obtained by Lutz, that it is necessary for the eggs to be still covered with their albuminous coatings when swallowed by the host if they are to grow up into adults in his intestine. The symptoms said to have been caused by the presence of ascarides in the intestine were mentioned; but it was shown that, although these parasites may undoubtedly in rare cases cause obstruction, yet, as a rule, hardly any or no symptoms are produced by them. Apparently, the most usual vehicle of infection is drinking water. Occasionally, however, food may become contaminated if the hands are soiled with mud or earth containing the eggs. This view is supported by the facts that ascarides occur most frequently during rainy seasons, and also that they are most prevalent in persons living on the borders of lakes and in swampy districts. Further, cases have frequently occurred in which direct infection through polluted drinking water has been shown to be exceedingly probable, if not quite certain. The ascaris lumbricoides usually inhabits the small intestine of man, but it has, however, been also found in the bile-ducts and after perforation of the intestine in the peritoneal cavity &c. The ascaris mystax of the cat and dog very much resembles the ascaris lumbricoides both in appearance and life history. It is, however, somewhat smaller, and, in addition, possesses characteristic wing-like appendages to its head. The eggs of both species are exceedingly resistant both to cold and dryness, and can retain their vitality for long periods, being able to develop, when suitable conditions are provided for their growth, even if several years have elapsed since they were laid. That the life history of the ascaris mystax is similar to that of the ascaris lumbricoides has been proved by Grassi by means of feeding experiments upon dogs. The ascaris megalocephala is the largest of the ascarides; it has never been found in man, but it is exceedingly common in the horse. Here, again, no intermediate host is necessary and the vehicle of infection seems, in the majority of cases, to be drinking water. The trichocephalus dispar, or whip-worm, which inhabits the cæcum and small intestine of man, is about two inches in length; the males are smaller than the females, and, like those of most parasitic nematodes, have bent-up tails which are provided with spicula. This parasite has been credited—though on very insufficient grounds—with being the cause of beri-beri. There seems no doubt, however, that when present in large numbers it may give rise to intestinal catarrh. The anatomy and life history of the oxyuris vermicularis, or thread-worm, were next described. Here, again, it has been proved by feeding experiments made in this case by Cobb that no intermediate host is necessary for the development of this worm, the eggs being able to develop into mature adults in the intestine of the host if they are swallowed immediately after they have been laid. The natural habitat of this parasite is the cæcum or the lower part of the ileum.

The third lecture was devoted to the consideration of those species which produce grave diseases in their hosts. The most important of these, the anchylostomum duodenale, was first described as to its anatomy and life history. Although no intermediate host is necessary, the eggs are unable to develop into adults in the intestine if they are swallowed immediately after they have been laid. It is necessary for them to first develop in muddy water or upon damp earth into rhabditiform larvæ, which, after moulting two or three times, at last reach a stage in which development is no longer possible until they have entered the intestine of man. More-

over, the eggs die if the temperature of the water or earth is too low, and this accounts for the fact that, although occasional cases of anchylostomiasis have been observed in Northern Europe, the disease has never been endemic, except in warm climates. The symptoms of the disease were next entered into and a historical account given of it. The connexion of the parasite with the disease, which had been variously described as "mal d'estomac," "cachexie aqueuse," "tropical or Egyptian chlorosis," "mal de cœur" &c., was first discovered by Griesinger in 1854. Numerous observers have recorded the frequency with which the anchylostomum duodenale has been found in cases of beri-beri, and, although it seems certain that the parasite is not the cause of the disease, yet there is very little doubt but that it plays a very considerable part in producing the anæmia so frequently present. The dochmius trigonocephalus of the dog, the strongylus contortus of the sheep and the strongylus convolutus of the ox all produce in their respective hosts diseases very similar in the symptoms and results to that produced in man by the anchylostomum duodenale. The life history of the strongylus armatus of the horse is peculiar in some respects. The adult condition is passed in the large intestine of the host, the eggs being evacuated with the fæces. As with the anchylostomum duodenale, the larval stage is passed in water or in damp earth; after which development takes place, not in the intestine of their host, but in the mesenteric arteries. Apparently the larvæ, immediately on reaching the intestine, commence to bore through its walls and to make their way into the mesenteric arteries, where they give rise to aneurysmal dilatations, in which the larvæ remain for some little time. It seems, however, that they never grow up into adults in these vessels, but make their way by some means or other into the large intestine of their host, where they become sexually mature. The heterakis maculosa is a parasite which inhabits the intestine of the pigeon, producing frequently a fatal disease in its host. Unterberger has shown that the eggs of this nematode require to be kept for about seventeen days under suitable conditions outside the body of the host before they reach the stage at which development in his intestine is possible. If they are ingested earlier they produce no effect. If, however, the necessary interval has been allowed to elapse ova commence to appear in the fæces about three weeks after infection has taken place. The experiments made by Grassi on the spiroptera sanguinolenta, which inhabits the alimentary canal of the dog, were next described. These experiments show that for this parasite an intermediate host is necessary, which, in this case, is the Eastern cockroach. Apparently dogs become infected by eating this insect. The life history of the rhabdomena strongyloides (anguillula intestinalis, anguillula stercoralis) is a peculiar one. The anguillula intestinalis lives in the intestine of man and gives rise, probably by parthenogenesis, to ova, which develop into sexual animals. These were for a long time considered to form a separate species, being known as the "anguillula stercoralis"; but it has been shown that if the embryos produced by them are swallowed by man they grow up into the asexual intestinal form. Thus here we have an alternation of generations—sexual and asexual. The evidence for and against the view that Cochin China diarrhœa is caused by the presence of this parasite was entered into, and the conclusion arrived at was that, although this worm may undoubtedly give rise to enteritis, yet it cannot be considered to have any causal relation to the disease first mentioned.

The lectures were closed by a summary of the anatomy and life history of the trichina spiralis and the effects produced by it upon its host.

THE ARMY ESTIMATES FOR 1893-94.

THE Army Estimates form a voluminous and somewhat intricate, but nevertheless clear and admirably arranged Parliamentary paper, embodying statements of the variations of the numbers of Her Majesty's British forces, explanations of the increases and decreases in the estimates, the amounts included for the colonies and Egypt, and the amounts provided for each arm of the service and for various miscellaneous establishments. The amount for total effective and non-effective services is £17,441,293, and the net increase for the year is set down at £171,600; but, as will be seen, the increase has not been caused by the medical services and establishments, for, according to the preliminary statement explanatory of the differences in the amounts proposed for 1893-94 and the amounts voted in 1892-93, Vote 4 (Medical Establishment) shows a decrease of £1900 for this year. This decrease is attributable to the pay of the medical staff having been over-estimated in past years, insufficient allowance having been made for casualties. The estimates of the sum required to defray the expense of the pay &c. of the medical establishment and cost of medicines is put down at £288,200, and, amongst the subheads under which this vote is accounted for, we may mention the pay of the medical staff, which is estimated at £225,800 for 1893-94, as against £228,000 in 1892-93, showing a decrease of £2200. The estimated pay of militia surgeons and civilian medical practitioners &c. amounts to £9950, showing an increase of £400 on that of last year. The cost of medicines &c. remains the same—viz., £16,000. The total strength of the medical staff, including that on the Indian Establishment, amounts to 954, from which 335 have to be deducted for India. The number of men on the regimental establishments of the army and auxiliary forces and of the reserves is estimated at a total of 712,507. The number of men of British regiments of all ranks serving in India is 72,858. A statement showing the rates of pay and the allotment of the staff &c. to the various districts and stations at home and abroad is given in Appendix No. 8, page 168 *et seq.*; and the total emoluments of officers serving at home are shown in Appendix No. 19, p. 217. Vote 11, subhead 1, for the staff of the Army Medical School, Netley, amounts to £7023, which is a slight decrease on the preceding year. Vote 13, Subhead A, provides for the Director-General and medical officers at headquarters, at an estimated cost of £4850. In our examination of these estimates, we have not so far been able to ascertain any evidence of the War Minister's intentions in regard to the recommendations made in the report of Lord Wantage's Committee.

ALABASTER AND OTHERS *v.* THE MEDICAL BATTERY COMPANY.

THIS was an action brought by the proprietors of the *Electrical Review* to recover damages for a libel contained in a circular issued by the defendants. The circular was issued in the following circumstances. The *Electrical Review* addressed a series of articles to the subject of the Harness "electropathic belt," in which the worthlessness of these contrivances for curative purposes was exposed, and one article in particular commented upon an action brought by the defendant company in the Bloomsbury County Court for the recovery of the price of one of these belts. In the course of that article the following observations occurred:—"It is quite impossible for the belt to generate any current as worn upon the body, for the external circuit was not completed by the connecting up of the zinc and copper poles, nor were any means indicated to the defendant of doing so for himself. Assume that one of these belts is properly connected up and that the exudations of the body act upon the metals so as to produce, by chemical action, an insignificant amount of electrical energy, does the current so produced pass through the body, and is it of any use medically? We reply emphatically, 'No.' ..... If the much-to-be-pitied persons of both sexes who so readily fall into the snare set by the president of the British Association of Medical Electricians and of the Medical Battery Company would only reason with themselves, a few minutes' reflection ought to convince the most foolish that the idea of a poor debilitated body generating the electricity for alleviating its own sufferings is most preposterous. But what words can be found sufficiently strong to condemn the practice carried on in the Oxford-street mansion in the treatment of rupture? That it should be possible in these days of enlightenment and in the midst of the largest city in the world for 16,900 cases of a serious malady to have been treated by a man having such qualifications for the task as the consulting officer of the Medical Battery Company proved himself in the witness-box to possess is beyond the comprehension of any reasonable being, and if ever there was a matter demanding the immediate attention of the Public Prosecutor, the revelations made at the Bloomsbury County Court point to it. If the treatment by an unqualified man of incurable disorders which require careful and skilful medical attention is not

actionable at law, the sooner some Bill is passed to make it so the better for suffering humanity. We trust that the report of this disgraceful case may be disseminated far and wide, for it will do much to enlighten the public as to the real *status* of Mr. C. B. Harness. ..... No wonder that he can spend yearly on advertisements a sum which most people would consider a princely fortune if 16,900 cases are treated at five guineas a time—probably more in numerous cases—in between six and seven years."

Upon the publication of this article the solicitors of the Medical Battery Company issued the circular complained of in the present action to some 500 newsagents of the metropolis, warning them that the *Electrical Review* and *Science Siftings* contained "malicious libels" upon the defendant company, and that if these or any future publications containing defamatory articles or paragraphs were sold or circulated by the persons addressed, the company would hold them responsible. The natural effect of this circular was to deter the newsagents from selling the papers in question. Evidence upon this head having been given, the plaintiffs proposed to call evidence in justification of the articles which they had written. To this evidence objection was taken in behalf of the defendants that the merits of the Harness belts did not come into question in the present action, the plea upon which they relied being that the circular was issued *bonâ fide* and in self-defence and therefore upon a privileged occasion. The Lord Chief Justice, however, held that the proposed evidence was material upon the issue as to the defendants' *bona fides* in issuing the circular. Thereupon Sir Edward Clarke, in behalf of the defendants, elected to admit that the circular was a libel and to leave the question of damages to the jury, stating that his clients were not prepared in this action to go into the question of the merits of the belt. The matter was accordingly left to the jury upon that footing, and they awarded to the plaintiffs damages to the amount of £1000. Judgment for that amount and for costs was given and the Lord Chief Justice refused a stay of execution.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Isolation Accommodation and Notification in the County of Surrey.—Dr. Seaton has made a most valuable report to the Sanitary Committee of the County Council upon these subjects. Referring first to the question of notification, we are told that all the sanitary authorities in the county, with one exception, have now adopted the Notification Act; the authority which still persistently refuses to adopt it being the Godstone rural. Both Dr. Seaton and Dr. Oldman have done their best to persuade the authority to complete the county list; but, so far, in vain. Amongst the Surrey united rural districts Dorking stands alone in being without any hospital provision, and it is of some interest to note that in this district the prevalence of scarlet fever has been much greater than in the two adjoining ones of Guildford and Reigate. It is also to be noted that the proportion of persons attacked to houses invaded was likewise greater in the Dorking district. These statements presumably refer to the year 1891. Negotiations have taken place between the sanitary authorities comprised within the Epsom union with a view to united action in providing a fever hospital. The Epsom urban authority have, however, refused to join, and are proceeding to erect a hospital of their own. At the present time about one-third of the population of the county is said to be provided with isolation accommodation, a fact which shows considerable advance on the condition of things existing eighteen months ago. Dr. Seaton is evidently an advocate of further powers being conferred upon the county council as regards hospital provision. Referring to the character of isolation accommodation, he remarks: "I cannot too strongly comment upon the undesirability of establishing, even as temporary accommodation, hospital provision likely to bring discredit upon the system of notification and isolation of infectious diseases." We are in entire accord with these sentiments, and naturally also agree with Dr. Seaton when he urges that persons admitted into a fever hospital suffering from one complaint should not be exposed to the risk of contracting another. Although it is possible, in a very large degree, to prevent this occurrence, we fear that in some cases at least, whatever precautions be adopted, some risk must be run—as, for instance, when patients are admitted into the wards of a fever hospital—of incubating some other disease in addition to the one from which they are suffering. This, we are afraid, must always be one of the necessary drawbacks of a fever hospital, or, in fact, of any hospital system whatever. No justification, however, can be found for a sanitary authority which allows small-pox to be treated in the same hospital with other infectious diseases.

Chelmsford Rural District.—After dealing with the population, area and geographical and physical conditions of the district, Dr. Thresh gives qualitative analyses of samples of water taken from various villages; he then discusses the questions of sewerage, excrement and refuse disposal &c. The same difficulty in connexion with the housing of the working classes seems to obtain here as elsewhere, and Dr. Thresh states that before advising his authority to take advantage of the powers conferred upon them by Part III. of the Housing of the Working Classes Act he is watching with interest the experiment in that direction at Ixworth, where a number of cottages are about to be erected by the Thingoe rural sanitary authority. Whilst upon the subject of burial grounds Dr. Thresh seems to favour the view that the county councils should be empowered to erect crematoria at convenient spots in their counties. In drawing up a set of by-laws for the district, we are glad to see, advantage has been taken of the powers conferred by the Public Health Acts Amendment Act of 1890. During the year 1892 several minor improvements have been effected, and it has been decided to provide isolation accommodation for the district, a system of sewers for one village and a public water-supply for several others. We agree with Dr. Thresh that it is much to be regretted that the Chelmsford urban sanitary authority could not see their way to join with the rural authority in the erection of a fever hospital. The past year has been fruitful in epidemics, and influenza, measles, diphtheria, mumps, German measles and scarlet fever have each claimed their victims in the district. The zymotic death-rate was 1·83. We notice with regard to German measles that here, as in other places, there seems to have been some difference of opinion as to the nature of the complaint. No less than 97 cases of diphtheria, concerning which a special report has been issued, occurred during the year, and they yielded a case mortality of 11 per cent. Last year, with fewer cases, the mortality was 20 per cent. Several cases of diphtheria seem to have been closely associated with attacks of scarlet fever. There can, as Dr. Thresh states, be little doubt that the condition of throat produced both by scarlet fever and measles forms a very suitable nidus for the activity of the bacillus of diphtheria. The general death-rate in the district was 18·2 as against 15·4, the mean of the preceding twelve years. The excess has fallen entirely upon the aged and is no doubt due in large part to the number of deaths (47) which were attributed to the effects of influenza. As Dr. Thresh remarks, it is to be hoped that the virulence of this disease is not capable of further intensification. This report is one of much interest and we hope it will be widely read.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 6783 births and 4125 deaths were registered during the week ending March 4th. The annual rate of mortality in these towns, which had been 19·2 and 19·7 per 1000 in the preceding two weeks, further rose to 20·8 last week. In London the rate was 20·8 per 1000, and almost corresponded with the mean rate in the thirty-two provincial towns, which was 20·9 per 1000. The lowest rates in these towns were 12·7 in Leicester, 15·3 in Croydon, 15·4 in Nottingham and 16·3 in West Ham; the highest rates were 24·7 in Leeds, 24·9 in Bolton, 25·6 in Manchester, 27·0 in Plymouth and 28·5 in Norwich. The 4125 deaths included 398 which resulted from the principal zymotic diseases, against 368 and 386 in the preceding two weeks; of these, 102 were referred to whooping-cough, 98 to measles, 61 to diphtheria, 49 to diarrhœa, 44 to scarlet fever, 32 to "fever" (principally enteric) and 12 to small-pox. No fatal case of any of these diseases occurred last week in Swansea or in Wolverhampton; in the other towns they caused the lowest death-rates in Leicester, West Ham, Gateshead and Oldham, and the highest rates in Manchester, Halifax, Plymouth,

Cardiff and Bolton. The greatest mortality from measles occurred in Portsmouth, Derby, Plymouth, Preston, Leeds and Bolton; from whooping-cough in Cardiff, Halifax, Burnley, Brighton, Nottingham, Norwich and Salford. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 61 deaths from diphtheria included 37 in London, 4 in Manchester, 3 in Liverpool and 3 in Cardiff. Five fatal cases of small-pox were registered in London, 2 in Manchester, and 1 each in Liverpool, Nottingham, Salford, Halifax and Hull; 183 cases of this disease were under treatment in the Metropolitan Asylum Hospitals and 15 in the Highgate Small-pox Hospital on Saturday last. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 2210, against 2513, 2402, and 2293 on the preceding three Saturdays; 208 new cases were admitted during the week, against 217 and 178 in the previous two weeks. The deaths referred to diseases of the respiratory organs in London, which had been 350 and 427 in the preceding two weeks, declined again to 385 last week, and were 111 below the corrected average. The causes of 87, or 2·1 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Croydon, Cardiff, Leicester, Sunderland, and in five other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Salford and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had declined in the preceding three weeks from 24·2 to 20·4 per 1000, rose again to 23·2 during the week ending March 4th, and exceeded by 2·4 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 15·7 in Aberdeen and 16·8 in Leith to 29·2 in Perth and 33·8 in Dundee. The 654 deaths in these towns included 53 which were referred to measles, 15 to whooping-cough, 9 to diphtheria, 8 to diarrhœa, 3 to scarlet fever, 2 to "fever" and 1 to small-pox. In all, 91 deaths resulted from these principal zymotic diseases, against 109 and 89 in the preceding two weeks. These 91 deaths were equal to an annual rate of 3·2 per 1000, which exceeded by 1·2 the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of measles, which had been 57 and 42 in the preceding two weeks, rose again to 53 last week, of which 24 occurred in Dundee, 15 in Glasgow and 6 in Paisley. The 15 deaths referred to whooping-cough showed a further decline from those recorded in recent weeks, and included 13 in Glasgow and 2 in Paisley. The fatal cases of diphtheria, which had been 8 and 10 in the preceding two weeks, were 9 last week, of which 7 occurred in Glasgow. The deaths from scarlet fever, which had been 8 and 10 in the previous two weeks, declined to 3 last week, and included 2 in Glasgow, where the fatal case of small-pox was also recorded. The deaths referred to diseases of the respiratory organs in these towns, which had declined from 182 to 135 in the preceding three weeks, rose again last week to 171, and exceeded by 16 the number in the corresponding week of last year. The causes of 62, or more than 9 per cent., of the deaths in the eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 29·7 and 27·4 per 1000 in the preceding two weeks, rose again to 27·7 during the week ending March 4th. During the first nine weeks of the current quarter the death-rate in the city averaged 28·9 per 1000, against 22·9 in London and 22·2 in Edinburgh. The 186 deaths in Dublin during the week under notice showed an increase of 2 upon the number in the preceding week, and included 6 which were referred to "fever," 5 to whooping-cough, 2 to diarrhœa, and not one either to small-pox, measles, scarlet fever or diphtheria. In all, 13 deaths resulted from these principal zymotic diseases, equal to an annual rate of 1·9 per 1000, the zymotic death-rate during the same period being 1·8 in London and 1·0 in Edinburgh. The deaths referred to different forms of "fever," which had been 7 and 2 in the preceding two weeks, rose again to 6 last week. The fatal cases of whooping-cough, which had been 1 and 2 in the preceding two weeks, further rose to 5 last week—a higher number than in any week since June, 1892. The 186 deaths registered in Dublin last week included 35 of infants under one year of age and 45 of persons aged upwards of sixty years; the deaths of infants showed a slight further increase upon recent weekly numbers, whilst those of elderly persons showed a further decline. Six inquest cases and 5 deaths from violence were registered; and 67, or more than a third, of the deaths occurred in public institutions. The causes of 21, or more than 11 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

MOVEMENTS IN THE MEDICAL STAFF.

SURGEON-CAPTAIN WM. WILFRID WEBB, M.B., Bengal Army, T.H.P., took over charge of his appointment as Secretary to the Army Medical School, Netley, and curator of the museum on March 1st. Surgeon-Captain A. E. Morris is posted to the Medical Division of the Royal Victoria Hospital, Netley, on return from leave of absence. Brigade-Surgeon-Lieutenant-Colonel W. J. Martin, A.M.S., having embarked at Portsmouth for India on the 2nd inst., is struck off the strength accordingly. Brigade-Surgeon-Lieutenant-Colonel Thomas O'Dwyer has been appointed Principal Medical Officer of the South-Eastern District. Brigade-Surgeon-Lieutenant-Colonel Steele has been appointed to the Charge of the Station Hospital, Western Heights, Dover. The following officers have embarked in the *Malabar* for India:—Surgeon-Major Myles and Surgeon-Captains Stalkartt and Burtchaell. Surgeon-Major Robbins has been appointed to Pembroke Dock. Surgeon-Captain Hunter has arrived at Hong Kong and Surgeon-Captain Hickman Morgan at Sierra Leone.

ARMY MEDICAL STAFF.

Surgeon-Colonel Thomas Rudd, M.D., to be Surgeon-Major-General, vice S. A. Lithgow, M.D., C.B., D.S.O., retired; Brigade-Surgeon-Lieutenant-Colonel Thomas F. O'Dwyer, M.D., to be Surgeon-Colonel, vice T. Rudd, M.D.; and Surgeon-Lieutenant-Colonel Thomas O'Reilly to be Brigade-Surgeon-Lieutenant-Colonel, vice T. F. O'Dwyer, M.D. (all dated Feb. 6th, 1893).

INDIA AND THE INDIAN MEDICAL SERVICE.

The following admissions to the Indian Medical Service have been approved: to be Surgeon-Lieutenants (dated Jan. 30th, 1893):—Bengal: Charles Milne, Vivian Godfrey Drake-Brockman, William Young, John Joseph Bourke, George Yeates Cobb Hunter, Bernard Robert Chatterton, Cedric Barkley Prall, Chas. Edward Williams, John Norman MacLeod, Walter Holland Ogilvie, Thomas Alfred Ollivant Langston, Richard Heard, Edgar Rowe Parry, Walter Hood Orr, and Paxton St. Clair More. Madras: George Bidie and John Plowden Morton. Surgeon-Captain G. A. T. Bray, doing duty, Belgaum and Bangalore Districts, is posted to do duty, Rangoon District. Surgeon-Lieutenant-Colonel W. F. Murray is appointed to act as Civil Surgeon of Shahabad. Surgeon-Major Owen, C.I.E., C.M.G., of the Commander-in-Chief's Staff, will, on the departure of Lord Roberts, be appointed Chief Medical Officer of the Patiala State. Surgeon-Captain J. Murray, Professor of Pathology and Materia Medica, Lahore Medical College, has obtained furlough to Europe on medical certificate for nine months. Surgeon-Major A. W. F. Street, D.S.O., is allowed furlough for two years from April 18th, 1893. Surgeon-Captain W. H. Burke, M.B., Assistant to the Civil Surgeon, Poona, is allowed privilege leave of absence for three months from March 2nd, 1893. Surgeon-Major H. P. Jervis, I.M.S., has been granted extension of leave for six months. Surgeon-Lieutenant-Colonel J. D. Gunning, A.M.S., has been granted leave for six months. Surgeon-Captains F. H. Treherne, A.M.S., G. H. Frost, I.M.S., and Surgeon-Lieutenant H. M. Earl, I.M.S., have passed the lower standard examination in Hindustani. Surgeon-Colonel Carter who, as Professor in the Lahore Medical College, has done some excellent work in connexion with Indian native poisons, will retire from the service in April next.

NAVAL MEDICAL SERVICE.

The following appointments are announced:—Staff Surgeons J. Acheson, M.D., to the *Brisk* on promotion, H. S. R. Sparrow to the *Rapid* on promotion, and A. Kidd to the *Caroline* on promotion (all dated Feb. 28th, 1893); J. H. Beattie to the *Royalist* (dated March 3rd, 1893). Surgeons:

A. J. Pickthorn to the *Orlando* and E. A. Penfold to the *Goldfinch* (both dated March 3rd, 1893); J. R. McDonnell to the *Neptune* (dated March 1st, 1893); R. T. Bowie to the Chatham Hospital and G. G. Bishop to the *Iron Duke* (both dated March 3rd, 1893). Surgeon and Agent: A. D. Vardon, at Pennant and Gardenstown (dated March 1st, 1893).

VOLUNTEER CORPS.

Light Horse: 1st Forfarshire: Surgeon-Captain T. F. Dewar, M.B., from the 1st Devonshire Volunteer Artillery (Western Division, Royal Artillery), to be Surgeon-Captain (dated March 4th, 1893).—*Artillery:* 1st Lanarkshire: The undermentioned Surgeon-Majors to be Surgeon-Lieutenant-Colonels:—G. R. Mather, M.D., and J. Provan, M.D. (both dated March 4th, 1893); Archibald Kerr Chalmers, M.D., to be Surgeon-Lieutenant (dated March 4th, 1893).—*Rifle:* 2nd (Prince of Wales) Volunteer Battalion, the Devonshire Regiment: Surgeon-Lieutenant E. G. Dutton resigns his commission (dated March 4th, 1893).—2nd (Berwickshire) Volunteer Battalion, the King's Own Scottish Borderers: Surgeon-Lieutenant S. Macvie, M.B., to be Surgeon-Captain (dated March 4th, 1893).—3rd (Dumfries) Volunteer Battalion, the King's Own Scottish Borderers: Surgeon-Captain A. D. MacDonald, M.D., to be Surgeon-Major, and Surgeon-Lieutenant J. Maclachlan, M.B., to be Surgeon-Captain (both dated March 4th, 1893).—4th Volunteer Battalion, the Cameronians (Scottish Rifles): Surgeon-Captain J. Macfie, M.D., to be Surgeon-Major (dated March 4th, 1893). 2nd Volunteer Battalion, the South Staffordshire Regiment: Thomas Martland, Gent., to be Surgeon-Lieutenant (dated March 4th, 1893).

VOLUNTEER MEDICAL STAFF CORPS.—The Norwich Company: Frederick Preston, Gent., to be Surgeon-Lieutenant (dated March 4th, 1893).

THE FEVER AT PESHAWUR.

We alluded not long ago to the serious prevalence of fever in the Peshawur garrison and to the removal of the Royal Welsh Fusiliers to Nowshera in consequence of its relief by the 3rd Battalion of the Rifle Brigade. We learn that the Royal Welsh Regiment has greatly improved in health, but that there have been many cases of fever among the men of the Rifle Brigade since their arrival at Peshawur.

REINSTATEMENT OF SURGEON-MAJOR KING.

According to an announcement in the *Fort St. George Gazette*, we are extremely glad to learn that the services of Surgeon-Major King, Indian Medical Service, are placed at the disposal of the Public Department. This means that the officer in question returns to civil employment, and that the justice and merits of his case have been established and recognised by the Indian Government.

ARMY RECRUITING.

The subject of recruiting—apart from its national importance, for the maintenance and efficiency of the army concern everyone—has a special interest for the Army Medical Service. The report for 1892 has now been published and the results are generally satisfactory, as may be concluded from the fact that in January, 1892, the army was nearly 5000 below its proper strength, whereas on Jan. 1st, 1893, it was over 1300 above it. The blots are the number of special enlistments—that is, the number of recruits accepted by special authority who are not up to the required standards of age or physical development—and the increased number of deserters, the bulk of whom are under one year's service. Recruiting has of late been carried on under more favourable circumstances. The facilities for discharged soldiers obtaining employment in civil life have been largely increased, the system of advertising has been developed, the soldier's comfort and position have been improved in every way, and these facts are beginning to be known. The system of dieting and cooking that has been recently introduced into the army has given rise to more contentment in its ranks and has relieved the State of a financial difficulty. We concur with the Inspector-General of recruiting in thinking that the adoption of the principle laid down by the Imperial Government of Germany in 1885 would have an excellent effect—viz., that every soldier of twelve years' service discharged with a certificate of good service has a prescriptive right to probationary employment in a large number of positions under Government, his permanent appointment to which depends upon himself and on the qualities and character he exhibits as a probationer.

EXCHANGES ON THE INDIAN ROSTER.

It is announced in the Indian papers that applications from officers of the Army Medical Staff for permission to effect an exchange on the Indian roster are to be submitted to the Principal Medical Officer of Her Majesty's Forces for the orders of the Commander-in-Chief in India; and applications to retire are to be forwarded through the same channel to the Military Secretary to the Commander-in-Chief.

OFFICIATING AND SUBSTANTIVE MILITARY MEDICAL APPOINTMENTS IN INDIA.

When a surgeon-colonel is appointed to officiate as a surgeon-major-general, or a brigade-surgeon-lieutenant-colonel to officiate in the administrative medical grades of the Medical Service, he will receive the temporary rank of surgeon-major-general or surgeon-colonel, as the case may be; and any time an officer may have officiated in the administrative grades of the Medical Service on full consolidated salary, should he be confirmed without reverting to his substantive rank, shall reckon as qualifying service for additional pension.

THE ARMY AND THE GOTHENBURG SYSTEM.

The Bishop of Chester, in introducing his Bill into the House of Lords on the retail sale of intoxicating liquors, made great use of the practice pursued in the army in illustration and support of his measure. The Gothenburg principle had been applied practically to the army in the canteen system and by the development of regimental and garrison institutes, with their many social and moral advantages to the soldier. The Bishop quoted General Goodenough to the effect that the army had been, in fact, without knowing it, for nearly thirty years following what is known to the public as the Gothenburg system, under which the profits from the sale of liquors are employed for the good of the community in promoting objects of approved utility for the men at large. He also quoted Sir George Chesney's testimony as to the growth and development of essentially the same system in India under Lord Roberts into what is known as the Soldiers' Institute or the Regimental Institute of the present day. There can be no doubt that these institutes have been productive of much good in the army serving in India, in promoting the cause of temperance and health and the diminution of crime. These institutes are, in fact, comfortable, well-managed social clubs, where the soldier may obtain everything he requires at a reasonable price and of a wholesome unadulterated quality.

Correspondence.

"Audi alteram partem."

THE SIGNIFICANCE OF ALBUMINURIA: A TYPICAL CASE.

To the Editors of THE LANCET.

SIRS,—Even whilst reading the leading article in THE LANCET of last week under the above title I have been dealing with a case proposed for insurance in a leading society, which seems to me to bring the whole matter to a bearing of the most practical kind, and the details of which I should like to submit as briefly and impersonally as possible. Is there such a thing as "physiological albuminuria?" If there be, then it occurs to me that the following must be a case of the kind.

X——, aged twenty-six years, a native of the Highlands, and preserving much of the appearance of such, applied for insurance on Feb. 3rd, 1892, and was examined and reported on next day. It was ascertained that he had scarlet fever when nine years of age, and again a sore-throat of some kind when seventeen or eighteen; but neither of these illnesses appeared to have left any deleterious consequences whatever, and his health otherwise was stated to have been good throughout. Examination in detail corroborated this impression in every particular but one. The heart, the pulse, the lungs and air passages, the abdominal organs generally, revealed no trace of disease to physical diagnosis or by symptoms. There were no venereal antecedents. His habits were apparently unexceptionable—"glass of claret only occasionally"—for the most part a practical abstainer. He was a slender, dark-complexioned subject, of perfectly healthy appearance; height 5 ft. 11 in.; weight 10 st. 5 lb.; girth of chest 31 in. to 33½ in., in expiration and inspiration respectively. The family history was unexceptionable as regards the parents and grandparents, unless it be that the paternal grandfather died of cancer at fifty-six. He is an only child. The urine at this date (Feb. 4th, 1892) presented the follow-

ing characters: sp. gr. 1030, normal appearance to the eye, no sugar, but a distinct trace of albumen, both to heat and nitric acid (urine passed at 2 P.M.). My report was as follows: "I think this case must be postponed, so far, at least, as to admit of inquiries in detail as to the albuminuria. Apart from this, I see nothing in the case to render the life ineligible."

A second sample of urine was obtained on Feb. 12th which had exactly the same characters, sp. gr. 1024. I then placed the inquiry in the hands of his medical attendant, with the general instruction that this was a question to be considered, not in the interests of the insurance office, but of the proposer himself. The result was that he returned on Sept. 27th, 1892, with a verbal report that his medical attendant had found the urine to contain a trace of albumen on several occasions after I had notified the fact to him, but on other occasions had found it free—no exact statements as to these occasions or as to the cyclic character of the albuminuria. On this I reported further as follows: "This life is in every respect unexceptionable, if we can take it as a rule to be followed that a *very small* trace of albumen in the urine, other circumstances being favourable, is not to be a bar to insurance. I am not personally quite of that opinion, though I admit circumstances under which accidental and occasional impregnations of serum albumen may not seriously damage a life from the insurance point of view. How far this is such a case will appear from the following summary: On Feb. 4th and again on the 12th I found the trace above mentioned in the urine of this gentleman. The same is the case to-day. Urine passed at half-past twelve normal to appearance in all respects, but with quite unequivocal trace of albumen by heat with acetic acid and by Roberts's solution of magnesium sulphate with nitric acid employed by the contact method." I then gave the medical attendant's verbal report as above, which he afterwards (Oct. 10th) reduced to writing as follows: "X—— supplied me with a sample of his urine weekly during the months of May, June and July to examine for albumen. In every sample I was able by the ordinary tests to detect a very small amount. I kept him under treatment for that time, but the quantity of albumen remained much the same. During the last two months I had several opportunities of examining his urine and found the quantity distinctly less, particularly so in the last two samples, where I had a difficulty in detecting even the slightest trace."

At a quite recent date in the end of February, 1893, this proposer called once more at the office and passed a sample of urine, which did not differ in any essential particular from the preceding as examined by me. He brought the following note from his medical attendant: "X—— has been supplying me with samples of his urine regularly every week or ten days since the date of last report. I have made a careful examination in every instance—microscopically and with the other tests for albumen,—with the result that I am perfectly satisfied there is no kidney disease in his case. In several of the samples sent in I could not detect any albumen at all, and the quantity, when it could be traced, was so insignificant that I consider it a waste of time to prolong the examination." Still, there the albumen remains, according to my examination in February, 1893, exactly as it was in February, 1892. I have already said, in public, at Birmingham and elsewhere, in discussions on the subject, that I cannot but regard the presence of serum albumen (reacting to heat and nitric acid) to this small extent and with this degree of persistency as a *danger signal*. If this statement of this case is disputed, on anything like reasonable grounds, by those who advocate a "physiological albuminuria," I may have something more to say on the subject. Meanwhile I do not wish it to be supposed that I think it follows, from the expression used above, that this man has Bright's disease, or that he is very likely to die soon. A danger signal may avert danger rather than bring danger. Nay, a danger signal may be disregarded and yet no train be wrecked. But, still, there it is, and from the insurance point of view I think it ought not to be disregarded.

I am, Sirs, yours faithfully,

Glasgow, March 7th, 1893. W. T. GAIRDNER, M.D.

PROGNOSIS IN ALBUMINURIA.

To the Editors of THE LANCET.

SIRS,—Your excellent advice that the time has arrived for a thorough reinvestigation of the prognosis of albuminuria will be shared by many men. I think that most help will be obtained from men who have kept private records of their cases for years rather than from hospital or even insurance records. If some method could be devised for collecting and analysing these notes an invaluable stock of renal knowledge would be available. The prognosis of heart disease has received more attention than that of albuminuria, and it will be in the recollection of many that the former, at the instigation of the Collective Investigation Committee, was ably introduced by Sir Andrew Clark and fully discussed at the annual meeting of the British Medical Association in Brighton in 1886. One starts in practice with a horror that every case of albuminuria is going to be fatal. After having scared a number of people needlessly, one gradually settles down to a more hopeful view of the presence of albuminous urine, which is comforting to the patient and beneficial to the doctor. At present it is impossible to say how many cases of early albuminuria develop Bright's disease and how many recover; but there is a point which must have struck several men much engaged in private practice—namely, the small number of deaths that occur from Bright's disease compared with the large number of cases of albuminuria met with. This appears to support the view, at any rate indirectly, that a good number of people recover. Some years ago I wrote to THE LANCET in reference to the "loading" of albuminuric cases, either in respect to the adding of years or of money. A fairer method seems to be that in which no extra premium is charged, but if the assured die previously to the age to which, as a first-class life, he might be expected to live, an equivalent deduction should be made from the amount assured, the deduction decreasing every year the assured lives, and if the assured should live as long as a first-class life is expected to live, the debt would be finally extinguished, and the amount of the original assurance would be paid in full at his death.

I am, Sirs, your obedient servant,

Folkestone, March 7th, 1893. W. J. TYSON.

INCIDENTS IN CHLOROFORMISATION.

To the Editors of THE LANCET.

SIRS,—On Sunday, Feb. 19th, I performed circumcision on a boy of eleven years, who had suffered for years from nocturnal incontinence. Dr. Thorpe administered chloroform on a napkin. The boy was very frightened previously to the operation, but he took the anæsthetic without struggling, and was speedily brought under. I had completed the operation, save the tying of the last stitch, when my attention was drawn to the patient's breathing; the respiration was very shallow, and as I looked it ceased. The nurse, an experienced woman, immediately exclaimed, "Oh, he is dead!" Dr. Thorpe quickly removed the boy's shirt, which was his only article of clothing except his stockings, and I seized the ankles, drew them over my shoulders, and, thus suspended, carried him about as well as the limited dimensions of the room permitted. After some minutes of this I placed him on the bed and we performed artificial respiration, drawing out his tongue at the same time. In about ten minutes we were rewarded by a faint gasp. The chest walls were very thin and the heart was noticed to be feebly beating, though no pulse was felt. By continuing the artificial respiration the breathing improved, and the abdomen rose and fell with each respiration. The breathing, however, again died away; the abdominal wall was flat and perfectly still. Dr. Thorpe then suspended him as before, and carried him through the room for from five to ten minutes. I observed the face become congested, and once more we resumed artificial respiration, to which he again responded after what seemed an age; but again we were disappointed, as respiration once more ceased. Four times in all was he suspended; the third time he vomited some unmasticated and undigested orange, which was with difficulty removed from his throat. Finally, I left him breathing comfortably after three-quarters of an hour's exertion. From the commencement of the anæsthetic until the collapse was about twelve minutes, and Dr. Thorpe informs me the quantity of chloroform used was two drachms. The boy is now well.

I am, Sirs, yours truly,

DONALD C. MARTIN, A.M., M.D.

Stourport, March 7th, 1893.

THE VACCINATION PROBLEM.

To the Editors of THE LANCET.

SIRS,—Will you permit me to express a hope that medical practitioners will not lose sight of your suggestion with regard

to writing to their representatives in Parliament to oppose the repeal of the Act for accumulative penalties for non-compliance with vaccination. There is now no time to be lost. I much wish copies of your able article in THE LANCET of May 14th, 1892, could be sent to each Member of Parliament. They will, of course, be inundated with the false statements of the anti-vaccinationists. It is a great pity that there is not a league of vaccinationists to disseminate the truth.

I am, Sirs, yours faithfully,

Worcester, March 6th, 1893. WM. WOODWARD, M.D.

DENTAL ADVERTISING.

To the Editors of THE LANCET.

SIRS,—The agitation in reference to the suppression of dental advertising is, I think, hardly a judicious one, for the simple reason that it cannot possibly bear fruit. The General Medical Council must, of course, be fully aware that many were making a practice of advertising at the time that they were admitted to the Dental Register, and therefore have practically a vested interest in the manner in which they now pursue their profession. This body of men have given no undertaking to subscribe to the so-called etiquette of the profession, and under any circumstances it would have to be shown that advertising *per se* was harmful, apart from the mere sentimental objections to it. Dentists, too, unlike the medical profession, have an appeal to the Courts, and their interests are so large that it would be highly improbable they would be disturbed. It is certainly a hardship that the new "L.D.S." is not able to compete on an equal footing with the mere "registered" men; but the remedy would surely not be found by inflicting an injustice on the latter body. Altogether the movement seems to me to be impracticable, and the present anomalous state of things can only be rectified by the course of time. An effort to obtain a better distinction between the "qualified" dentist and the merely "registered" one would be more reasonable at the present moment, and more likely to yield better results.

I am, Sirs, yours faithfully,

March 1st, 1893 A LOOKER ON.

LIGATURE OF THE ANTERIOR TIBIAL ARTERY.

To the Editors of THE LANCET.

SIRS,—I read with much interest Mr. A. Pearce Gould's interesting case of ligature of the anterior tibial artery in THE LANCET of March 4th. My object in writing is to draw attention to the great success attending the practice advocated by Mr. Gould during the American Civil War. Both Confederate and Federal surgeons tied the anterior tibial artery in cases of compound fracture of the bones of the leg with success. Assistant-Surgeon R. O'Leary, P.A.C.S., reports in the November number of the *Confederate States Medical and Surgical Journal* for 1864 a successful case, and the Surgeon-General, U.S.A., gives a summary of forty-seven ligations of the anterior tibial artery; twenty-six patients survived the operation. In seven cases, with four recoveries, the posterior tibial artery was likewise tied. In fifteen cases in which amputation was performed secondary bleeding took place, necessitating ligature of the vessel on the face of the stump. Twelve cases were treated by ligation of the artery at the seat of the injury; of these six recovered and six died, or required amputation—a much smaller percentage than the usual from ligation of arteries, for of the 1155 ligations recorded in the U.S.A., 684 died—a result not to be wondered at when we think of the hardships their wounded troops suffered during the retreats from Fredericksburg, the Peninsula, Manasses, Chancellorsville, and many other great battles. The tendency of the hardships endured during transportation to produce secondary hæmorrhage is illustrated by Surgeon Brinton's case occurring during the flight from Fredericksburg.

I am, Sirs, yours truly,

GEORGE FOY, F.R.C.S.I.

Cavendish-row, Rutland-square East, Dublin, March 4th, 1893.

FAMINE AND TYPHUS FEVER IN BENCHASI.—News has been received in Tripoli to the effect that famine and its common attendant, typhus fever, have been causing terrible mortality amongst the inhabitants of Benchasi, the Turkish African province of Berea.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Tyne Sanitary Authority.

THE medical officer for the Tyne port sanitary authority, Dr. H. E. Armstrong, has issued a most interesting report, especially as regards the cholera precautions necessary last autumn in consequence of the great inter-communication of the Tyne with foreign infected ports. As regards the work done it is only necessary to state that from Aug. 30th to Nov. 21st last a continuous inspection was necessary of 497 ships carrying 3059 passengers and hands, and, with few exceptions, these had come from cholera-infected ports. Dr. Armstrong speaks highly of the work of Dr. Clark, Mr. Webster, Drs. Steegman, Marshall and others, but says very little about his own work and risks, but it is well known and remembered (at least by his professional *confrères*) that he did not spare himself during this trying period, and indeed he remained up a whole night with a cholera patient and only left the poor fellow when he died. It is a pity that Dr. Armstrong's exertions have not been adequately appreciated by the Tyne sanitary authority.

The Knight Memorial Hospital, Blyth.

The annual meeting of this new institution (which is a great advantage to Blyth and its vicinity) has been held. Dr. Newstead says in his report that in all about 800 patients were treated. The financial condition of the hospital is satisfactory, but more subscriptions will be necessary to cope with the increasing population.

Small-pox in Northumberland and Durham.

Although there is nothing in the nature of an epidemic of small-pox in the north, one hears from day to day of cases here and there. It has reappeared at Sunderland, as also in Durham city and Weardale. In most cases it can be traced to tramps and wayfarers. If anything could be done to stop the migrations of these unsettled "gentry" I believe that the disease would before long be stamped out.

Sad Accident to a Durham Grammar School Master.

Many of the readers of THE LANCET who have been educated at the Durham Grammar School will be sorry to hear of the sad accident to Mr. F. A. Ker, M.A., tutor of modern languages for several years at that school. Mr. Ker, who was very fond of trapeze exercise, fell from the cross-bar when practising last Thursday, and he received such injury to his spine that he died in two days in the Durham County Infirmary.

Sunderland

A successful effort was made last week to benefit the infirmary and other charities by the press and dramatic charity carnival, resulting in the sum of £170. Next year it is proposed to enlarge the scope of the attractions by having, as at Newcastle, a musical *matinée* as well. A correspondent of the *Sunderland Echo* says that of the thirty-nine surgeons practising in Sunderland forty-two years ago there are only four now remaining.

Middlesbrough Asylum.

At a meeting of the Middlesbrough Asylum Committee the architect to the Lunacy Commissioners was instructed to prepare plans for a lunatic asylum to be erected on the Marton estate and to provide accommodation for 220 beds and at the same time for a possible increase of eighty patients.

Newcastle-on-Tyne, March 9th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh Medico-Chirurgical Society.

AT the meeting of this Society last week Dr. John Duncan read a paper on the Surgical Treatment of Gall-stones, in which he gave his experience of operation in ten cases. Out of these there was only one death, and the patient who died was an old and much worn-out man. He regarded the operation as a suitable and a safe proceeding. The second paper was by Dr. Rutherford Morison of Newcastle on Some Mistakes and Accidents in the Technique of Abdominal Operations. The paper was a very practical one, illustrated by Dr. Morison's experience.

Aberdeen Asylum for the Blind: Annual Report.

The report for 1892 shows that forty-seven blind persons had been employed in the workshop of the institution, and the sum disbursed in wages, for holidays, sick allowance &c., was £1353 18*s.* 3*d.*, this being the largest sum paid in any one year since the asylum was opened in 1843. Ten children had been educated and had received industrial training. The donations received during the year amounted to £524 18*s.* 2*d.*, being a decrease of £17 6*s.* 8*d.* There was excess of expenditure over ordinary income of £376 8*s.* 0½*d.*

Health of Aberdeen.

Last week there were notified 2 cases of measles, 6 of scarlet fever, 1 of typhoid fever, 2 of erysipelas and one of puerperal fever—total, 12 cases.

Medical Officers to Aberdeen Corporation Employées.

This week the Aberdeen town council appointed Messrs. J. A. R. Glennie, M.B., J. R. Levack, M.B., and J. Marnoch, M.A., M.B. Aberd., to be medical officers to their *employées*. These are new appointments and this is the first election.

Aberdeen University.

Amongst the list of honorary graduates in Laws (LL.D.) issued this week are the names of Sir Frederic Bateman, M.D., F.R.C.P., and Professor Crum-Brown, M.D. Edin., D.Sc., F.R.S. &c.

March 7th.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Small-pox.

THE registrar of Lisburn District has reported that two fresh cases of small-pox have occurred in his district. He has strongly recommended revaccination. None of the inmates in the houses will consent, though all the children in the infected houses are vaccinated.

Case of Opium Poisoning.

A graduate of Trinity College committed suicide last week by taking a large quantity of laudanum. He was addicted to drink and was in the habit of taking laudanum. The druggist who sold the laudanum (two ounces) stated that he could sell it to any person so long as it was labelled "poison," which caused the coroner to remark that it was a very bad Act of Parliament which allowed the sale of laudanum without a medical man's certificate.

His Excellency the Lord-Lieutenant has placed Dr. Supple on the Commission of the Peace for the Borough of Drogheda.

March 7th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Microbeless Islands.

DURING a recent sojourn in the Spitzbergen group of islands in the Arctic regions M. Coutsaud took the opportunity of studying the bacteriological peculiarities of these ice-bound spots. Analysis of the air, water and soil of Spitzbergen brought to light the extraordinary poverty of these regions in bacteria. Whilst, according to Miquel, the air of the streets of Paris contains on an average 51,000 bacteria, that of the Arctic Seas contains only 3 per cubic metre. As to the water of Spitzbergen, not only is it devoid of any pathogenic micro-organisms whatever, but all bacilli are absent. In the water of the island of Jean Mayen, however, there were discovered the bacterium termo and a few short and mobile bacilli. The bacillus subtilis, so commonly met with in the different countries of Europe, was undiscoverable in the soil of those regions. At Jean Mayen there was found in abundance a leptothrix composed of long filaments irregularly twisted about 1 μ in diameter, producing elliptical and highly refracting spores. This species grows on gelatine into dense colonies, which possess no liquefying properties, but develop during growth a characteristic brown colouration. Despite these obvious advantages, I doubt if Spitzbergen will ever come to be regarded as a desirable sanatorium for microbe-ridden humanity

A Delicate Problem.

The *secret professionnel* is an important factor in the life of a French medical man, seeing that the divulging of any information that can possibly be ranged in that category renders the informant liable to a heavy penalty. No wonder, then, that this question is, in its various phases, periodically discussed by professional corporations. The Association Syndicale des Médecins de la Seine having recently taken into consideration the proper course to be pursued by a physician called in by the family to a case of abortion in an unmarried girl staying with her aunt, the patient having attained her majority, decided unanimously that the practitioner was bound to absolute secrecy as to the nature of the illness. M. Le Blond maintained, however, that should the doctor be called in by the family they should be told the truth; but that if the young girl has herself sent for him it is his duty to keep the secret. If the girl be a minor, the family should, according to M. Petit-Vendol, be told the truth.

Phthisical Patients in Paris Hospitals and their Cost.

A special hospital for phthisical patients corresponding with your own Brompton establishment does not exist in Paris. Traverse any of the medical wards in the general hospitals and you will find a large proportion of the beds occupied by poor sufferers from pulmonary tuberculosis. Apart from the acknowledged danger of infection thus thrust upon the other occupants of the wards, it has long been felt that it is not fair to the population to perpetuate this monopoly of beds by patients who, apart from the better nourishment offered them in hospital, derive very doubtful benefit by their sojourn in a germ-laden atmosphere. In a recent article on the subject M. Letulle (*Revue d'Hygiène*) gives some figures which speak for themselves. His investigations were limited to three hospitals during the year 1891.

Hospital.	Total No. admitted on medical side.	Phthisical patients.	Total deaths.	Deaths from Phthisis.
St. Antoine ...	11,680 ...	1960 ...	1433 ...	525
Beaujon ...	6,169 ...	554 ...	723 ...	234
Charité	— ...	1055 ...	547 ...	229

At St. Antoine, of 271,076 days in hospital, 55,200 are absorbed by phthisical cases, entailing an expense for the latter's maintenance of 154,560 francs out of 759,012 francs (the total expense). At the Charité, 31,816 out of 135,489 days in hospital are apportioned to phthisical patients, the cost being for them 108,174 francs out of a total of 460,662 francs. From the above figures it is seen that at least one-fifth of the days in hospital and of the total cost is taken up by phthisical patients. Can anybody truly say that the result is anything like commensurate with the cost and with the sufferings entailed on disappointed candidates for admission? And how many originally phthisis-free patients contract phthisis during their stay in wards thus contaminated?

March 7th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Cholera in Prussia.

A MEMORIAL regarding the measures taken against cholera attacks was laid before the Prussian Lower House the other day, and from it the following items may be taken:—The number of cases reported in Hamburg before the end of 1892 was 18,008, that of the deaths 7622. In all probability the epidemic was due to the fact that the water of the Elbe at the place at which it flowed unfiltered into the conduits of the city was infected. "It is almost absolutely certain that the comparatively small numbers of cases and deaths (578 and 331) in the city of Altona, which is immediately connected with Hamburg, the streets of the one being uninterrupted prolongations of those of the other, and which does not differ from that city in any of the vital conditions concerned, were due solely to the superiority of the water-supply. The percentage of death in Hamburg was 1·24, in Altona 0·23." Special attention is drawn to the infecting of rivers and canals by barges, which carry with them infected bilge-water and discharge it into uninfected waters; not to mention the fact that their inmates take their water indiscriminately from the rivers and empty their refuse into them. In Berlin there were only thirty-two cases; seven of the patients came from Hamburg by land, fourteen were inmates of barges, and

the remaining eleven cases were mostly directly traceable to the water of the Spree. As regards the prospects for the future, the memorial says: "Unfortunately it cannot be said that cholera was extinct in Prussia at the end of 1892, for several cases imported from Hamburg occurred in Altona in the last week, and, considering the present state of the epidemic in Hamburg, invasions from there are still to be feared. The same danger threatens from the neighbouring western and eastern countries, for in the last week of the year cases were reported from the north of France and the Netherlands and from the Russian-Polish Governmental districts of Radom, Lublin, Warsaw, Plock and Lomza. It is also possible that in Prussia itself germs emanating from last year's cases have remained undestroyed and that, after lying latent for an indefinite time, they may again develop under more favourable conditions and cause a new epidemic."

The German naturalists and medical men will hold their annual meeting in Nuremberg from Sept. 11th to Sept. 16th. Professor von Helmholtz will deliver an address.

It is expected that the Sanitary Conference in Dresden will be opened next Saturday, the 11th inst.

The city of Berlin intends to build a fourth hospital, but the project is still in a very preliminary stage.

March 5th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

On the Use of Benzosol in Diabetes Mellitus.

BENZOSOL or benzoyl-guaiacol, which has been introduced by Dr. Bougarts as a substitute for creosote and guaiacol, has recently been recommended as a very useful remedy in diabetes mellitus by Dr. Platkowsky of Cracow. It is administered in doses of one to three grammes per diem. According to a recent communication at a meeting of the physicians at Prague by Professor Jaksch, the sugar disappeared from the urine after the administration of benzosol for eight days in the case of a female patient aged fifty-six years who had 5·7 per cent. of sugar, but the patient died in consequence of a toxic enteritis with grave jaundice, which was attributed to the use of the remedy. On the other hand, it has been pointed out by a Vienna chemist that caution must be exercised with regard to the polarimetric examination of the urine in cases where benzosol has been administered, as the urine of persons who have taken this drug polarises to the left and therefore the polarimetric examinations of the urine of such persons, when it contains sugar, are misleading.

Cholera in Austria-Hungary.

No case of cholera has occurred in the empire during last week. The total number since the outbreak of the epidemic at Budapest is stated to have been 1063. Of these 604 recovered, whilst 459 died. Real Asiatic cholera could be determined only in 810 of these cases.

New Medical Institutes.

At a recent meeting of the Austrian Parliament the Minister of Public Instruction promised that the erection of the new Physiological Institute and of the new Surgical Clinic of Professor Billroth would soon be commenced.

March 6th.

OXFORD UNIVERSITY AND INFECTIOUS DISEASES.—The Convocation of Oxford University was on Tuesday last engaged in discussing a question of some difficulty in connexion with the proposal to erect a fever hospital adjoining the City Hospital. It appears that the authorities of the Radcliffe Infirmary had determined to close its wards for infectious cases, so that it became necessary that provision should be made for such cases elsewhere. The scheme provided that the new hospital, with twelve beds, should be administered by the committee of the Sarah Acland Home and that the cost of its maintennance should fall upon the undergraduates. The proposal was criticised adversely by Dr. Collier, who preferred an iron and wooden structure for the purpose suggested rather than a costly permanent building. The question of site with regard to its healthfulness was also made a matter of dispute. Sir Henry Acland confessed to having great difficulty in deciding for himself how he ought to vote in the matter, and ultimately the proposal was rejected by a majority of 43 against 33.

Obituary.

JAMES ANDERSON, M.A., M.D. ABERD., F.R.C.P. LOND.

IT was with great regret that we last week intimated the sudden and premature death of Dr. James Anderson, after an illness of about thirty hours' duration. We now give a brief outline of his life—a life in which it will be seen that the foundations of success were laid in most careful preparation and much hard work. Dr. James Anderson was born in the year 1853 in the parish of Logie Buchan, Aberdeenshire, where his father was a farmer and grain merchant. The family consisted of three brothers and two sisters, the subject of this notice being the second brother. His father went to Australia to push his fortune, and died there within a short time. Upon the mother, therefore, devolved the care and upbringing of the family, and James Anderson was ever ready to acknowledge how much he owed to his mother. She was a woman of rare gifts, uniting a strong intelligent mind and much good sense with great tenderness and depth of feeling. Between mother and son the bond of affection was of the strongest and deepest. After being some time at the parish school James Anderson entered Gordon's Hospital School, where he was retained for six years as a most promising pupil to be sent up to the university. Having gained a bursary in the Faculty of Arts, he entered the University of Aberdeen. His course in Arts was very distinguished, his place in all the classes being very high, and in 1873 he took his degree of M.A. He carried off the gold medal as the best student of his year, and also the Murray scholarship—a scholarship tenable for three years and enabling its holder to prosecute scientific study. The above record is in itself a remarkable one, but it becomes far more so in Dr. Anderson's case from the fact that during all his university course he was obliged to engage in laborious private teaching, which so filled up his time that his own work was done mainly in the hours that should have been given to sleep. The habit thus formed of doing without sufficient sleep and of carrying on his work far into the night grew upon him in later years and undoubtedly impaired a constitution never the most robust. Dr. Anderson pursued his course of medical study with equal distinction, taking a first place in almost all his classes and graduating M.B., C.M., with highest academical honours in 1877. During the next two years he was demonstrator of anatomy under Professor Struthers, and at the conclusion of that time he went to Berlin and Vienna, where he spent a year in study, mainly in the special departments of ophthalmology, laryngology &c. He then settled in London, was for a time clinical assistant at the Royal London Ophthalmic Hospital and at the Hospital for Skin Diseases, Blackfriars, and shortly afterwards was appointed a demonstrator of anatomy at the London Hospital. In 1881 he became a Member of the Royal College of Physicians of London, and received the appointment of assistant physician to the City of London Hospital for Diseases of the Chest—an appointment which he held for some years. Dr. Anderson was also appointed medical registrar at the London Hospital, upon which followed in 1886 his appointment as assistant physician to that hospital, where likewise, at the time of his death, he was lecturer on pathology. In 1888 Dr. Anderson was elected assistant physician to the National Hospital for the Paralysed and Epileptic, Queen's-square, and only a week or so ago he became full physician to that institution. He was formerly an examiner in physiology and natural history in the University of Aberdeen, and a member of the Examining Board of the Royal College of Physicians of London and of the Royal College of Surgeons of England. He had held the offices of secretary to the Ophthalmological and Neurological Societies, was a Fellow of the Royal Medical and Chirurgical Society, and a member of the Pathological and Clinical Societies. He was for a time joint editor of the *Ophthalmological Review*, and was the author of the article "Epilepsies and Insanities" in Tuke's Dictionary of Psychological Medicine and of "Abnormalities of the Kidney" in Ralfe's "Diseases of Kidneys." He devoted a great deal of time to clinical teaching at the hospitals with which he was connected, and this, together with his increasing private practice, made it impossible for him to write much; but he had published some valuable papers in medical journals, chiefly upon ophthalmological and neurological subjects. Any

matter pertaining to his old university had for him the greatest interest. He was one of the founders of the Aberdeen University Club, London, and amongst the last letters he wrote was one relating to the portrait of his old friend and teacher, Professor Struthers. Dr. Anderson's illness was sudden and of brief duration. His mother's death, just a year ago, was a great trial to him, and he hardly seemed the same man after it; but yet, on Sunday, Feb. 26th, he appeared to be in his usual health and made no complaint of illness. When his servants retired for the night he was writing in his study, and he posted his letters between 12 and 1 o'clock. After that time he was seized with diarrhœa, leading to syncope and followed by pleuro-pneumonia, and he was found in his study in the morning in a state of collapse. He never fully rallied. The heart failure continued and became more marked. There was intestinal hæmorrhage and rapid engorgement of the lungs. He died at eight o'clock on Tuesday morning, Feb. 28th. As a man, as a teacher, as a physician and as a friend, Dr. James Anderson was beloved by all who were privileged to know him. His intense love of truth, his pure-mindedness, his unselfish and unobstrusive kindness and his sympathy endeared him to all who came in contact with him. Although often weary with the burden of his own work, his sympathetic nature never refused help or advice to those who sought it. The young student, the busy practitioner and the old personal friend, all alike went to him with their troubles, and were sure not only of a ready response and of sympathetic interest but of wise counsel and of practical help. In the hearts of his friends his place can never be filled.

One of his colleagues, who knew him well, writes:—"Dr. James Anderson's death is a bitter calamity for his numerous friends. The suddenness of his decease in the midst of what seemed to most energetic vitality makes his loss the less bearable to those intimately associated with him. There is something of irreplaceable value torn out of their lives. He was too good a man to be bedizened with laudatory adjectives. To say that he was honourable and that he was courageous in right conduct is to apply words which, from lavish use, have lost much of their definite meaning. But to those who knew Anderson well they, applied to him, who was the embodiment of straightforwardness and rectitude, fill out with meaning. He was a bright example of what a medical man should be in his endeavours for success; I do not mean a commonplace success, but that to be earned by good work, done without mere personal aims, and not done only on lines of conventional ambition. Bacon wrote: 'I hold every man to be a debtor to his profession; from the which, as men of course do seek to receive countenance and profit, so ought they of duty to endeavour themselves by way of amends to be a help and ornament thereunto.' Anderson certainly did his work as if he felt himself a debtor to his profession. Very many men will find themselves more able practitioners and more worthy members of our great profession in consequence of his teaching and example. Anderson will live in their grateful memory. Yet it is a pain to think that one so endowed naturally, disciplined so greatly by a severe intellectual training and so well equipped with most varied technical knowledge, should have left behind him on printed record so little to testify to those who did not know him personally his intellectual power and moral worth. I say moral worth in this regard in respect of scientific work. For love of accuracy and truthfulness are not really so distinct as popular speech makes them out to be. A love of accuracy is as much a moral as an intellectual quality. Anderson in his daily medical work was never anxious to be definite when accuracy was impossible; would not speak as if he knew when he could only suppose; and did not take a simple view of a complex case by ignoring its difficulties. Yet he had nothing in common with the Philistine who talks of facts as if they had no relation to general principles—facts *in vacuo*."

Dr. Struthers writes:—"My acquaintance with Dr. James Anderson began in the summer session of 1873, when he commenced his medical studies on the conclusion of his four years' arts course in the university. He had been a distinguished student in arts, and at the end of the course had awarded him the gold medal given by the magistrates and town council of the city 'to the most distinguished scholar at the termination of the arts curriculum,' and he had gained the valuable Alexander Murray Scholarship, open to competition amongst all the graduates in arts of the last three years, tenable for three years. During the three years he was in the anatomy class he was first prizeman in each year in the various stages and branches, and in the third year in regional anatomy. He was recognised as the leading student in my class during all that time, and I may say in the medical school generally, his name, I see, occurring repeatedly as first prizeman in other classes. Besides the natural ability and working habit which gained him these distinctions he showed already as a student the qualities of character for which he was remarkable in after-life. He graduated in medicine in April, 1879—I need hardly add, with 'highest honours'—and I had no hesitation in selecting him at once for the responsible position of demonstrator of anatomy. The various duties of that position he discharged most ably, having charge of the dissecting-room as chief assistant, conducting entirely an osteology class for beginners, conducting with me the summer laboratory course of practical histology, and when I had occasion to be absent he took my place in the lecture-room. I could trust Dr. Anderson in every way, not only for his ability and attainments, but for his conscientiousness and his high sense of honour. It was a great regret to me when the inevitable time for his leaving came, for there was no fit career for him in Aberdeen. Before going to London he went for further clinical experience to Berlin and Vienna, accompanied by his friend, Dr. Alexander Macgregor, now of Aberdeen, who had been junior demonstrator with him in anatomy. In London Dr. Anderson attached himself to the London Hospital, beginning as demonstrator of anatomy, where his work was soon recognised by Sir Andrew Clark, Dr. Stephen Mackenzie, Mr. Treves and other members of the staff. The various appointments Dr. Anderson held at the London Hospital and its school, and elsewhere in London, and the position he had made for himself in London, are well known. During these twelve or thirteen years of his London life I have seen him from time to time and have observed in him the development of the same qualities that he showed in his time with me, his devotion to work, his remarkably judicious mind, his composed, unassuming manner and his kindness of heart. Dr. Anderson's progress in the arduous aim at position as a London physician was rapid, the more so considering that he began as a stranger there, and it would have been surprising to me had I not known his ability and character. Years ago, from what he told me when he removed to his house at Wimpole-street, he already had his foot firmly on the ladder of consulting practice, and I do not doubt that he would have attained to the highest rank in that position. His early death is a profound grief to all who knew him personally, and it may without exaggeration be said that the death of such a man is a loss to the medical profession. That one so physically strong as Dr. Anderson was should have fallen so early may appear surprising. I am led by his death to think of the number of able and most promising assistants I have had both in Edinburgh and Aberdeen who have gone down in early life. There are limits to the extent to which even an iron frame can stand long years of constant overwork, day and night. When to that is added the London atmosphere and the consideration that the younger men of the hospitals are often kept on duty too much in the autumn, when their seniors who have survived the ordeal are having their well-earned holiday, early breakdown need not be surprising. I trust that steps will be taken to perpetuate Dr. James Anderson's name in some suitable way at Aberdeen and at the London Hospital School."

Dr. Johns, who was house physician to the late Dr. Anderson, supplies the following: "As assistant physician, with the charge of out-patients and with fifteen beds for in-patients, Dr. Anderson was brought much in contact with the students, and it was his ambition to bring himself into touch with all who worked with him. It was the ready sympathy, which he showed to all, with the difficulties of their professional work, and the kind attention he gave to personal troubles, however apparently trivial, together with the soundness of his advice, that so completely endeared him to all who had the privilege of coming into contact with him. As a teacher in the out-patient department he was unsurpassed for the rigid thoroughness of his methods of examination, with a most emphatic manner of impressing the important features of each case on his hearers. He himself, a most earnest student and thorough in every detail of examination and inquiry, would allow no half measures among those working with him, and by his very example roused a spirit of enthusiasm like his own. In the out-patient department he constantly, tired with the work of a heavy afternoon, would, after the last case had been seen, in spite of the calls on his time, devote an hour or more to a short clinical lecture on methods of examination and diagnosis, emphasising his remarks by

alluding to the cases of interest which had recently been treated. To these lectures, and by watching and trying to follow Dr. Anderson's methods, many of us owe what is best in our knowledge of diagnosis and treatment. As a demonstrator of morbid anatomy he was most popular for his careful and accurate examinations, always ready to give, and indeed inviting criticism of his remarks that he might give, the reasons for all his statements and thus impressing the truth of his words on his hearers. That he was popular as a lecturer on pathology can be gathered when we are told that, though following such an esteemed and eloquent lecturer as the late Dr. Sutton, the theatre was crowded for his lectures, not only by the men in the college but by men qualified and unqualified of all years, and his words followed by as much attention as was accorded to his unrivalled predecessor. His popularity as a lecturer was not confined to the students. As lecturer to the nursing staff his loss is felt by every nurse and sister in the hospital, and his knowledge of all the minor details of nursing was remarkable. With regard to the students generally he was a universal favourite from his absolute straightforwardness. He invited the confidence of all about him by proving himself worthy of it, and I am but expressing the feeling of my fellow students when I say that we have not only lost a great teacher but a friend."

A meeting was held on Tuesday at 16, Cavendish-square, for the purpose of considering the advisability of instituting some memorial of the late Dr. James Anderson. There was a large attendance, and amongst those present were Sir Andrew Clark, Mr. Hutchinson, Mr. Nettleship, Drs. Hughlings Jackson, Ormerod, Stephen Mackenzie, Ferrier and Mitchell Bruce. Touching reference was first made to the loss the medical profession had sustained through Dr. Anderson's untimely death. The meeting then expressed itself as strongly in favour of the proposed memorial being founded, and resolved, if possible, to coöperate with a similar movement which has been started in Aberdeen. The following committee was then appointed to carry out the preliminary arrangements:—Sir Andrew Clark (chairman), Dr. Hughlings Jackson, Dr. Ormerod, Dr. Ferrier and Dr. Gilbart Smith. Dr. Burnet and Dr. Fitzgerald were appointed honorary secretaries.

At a meeting of the Aberdeen University Council on Saturday last Principal Sir William Geddes referred to the death of this distinguished graduate. He had attained, he said, by his own energy, skill and perseverance in the path of duty, almost the highest rank in his profession in the metropolis; and to them, in their alma mater, he was memorable as a typical example of the cultured physician—a fine specimen of what the combined training in arts and medicine at Aberdeen could enable a man to achieve. Emeritus Professor Alexander Bain, LL.D., also spoke of the sudden loss of this distinguished physician, and alluded to the melancholy interest attaching to one of Dr. Anderson's last remarks to him: "I shall be very happy if my system at seventy-two is found as good as yours."

PROFESSOR BENJAMIN BALL (OF PARIS.)

ON Sunday, the 26th ult., the remains of Dr. Benjamin Ball, Professor of Mental Medicine at the Paris Faculty and Physician to the Laennec Hospital, were laid in their final resting-place. Professor Ball's last appearance as a lecturer was at the St. Anne's Asylum on Jan. 17th, 1892, the subject being "La folie politique." Since the 22nd of that month he had been incapacitated from work, his place in the chair of Mental Medicine and as Physician to the Laennec Hospital being provisionally taken by Dr. Ballet and Dr. Petit respectively. For some months before his death he was aphasic, but up to the very last his intellectual faculties remained intact and he was able to sign his name shortly before the fatal *dénouement*. After a short service performed by the Protestant pastor, M. William Monod, at the late Professor Ball's residence, 35, Rue des Martyrs—a very appropriate name, seeing that he probably fell a victim to excessive mental strain—the funeral procession wended its way past the detachment of the 2nd Regiment of Marine Infantry in attendance in honour of the dead knight of the Legion of Honour, and finally deposited the remains in a vault in the Montmartre cemetery. Amongst the large body of mourners at the house and at the grave were nearly all the professors and *professeurs-agrégés* of the Faculty in their picturesque robes, including MM. Charcot, Brouardel, Guyon, Farabeuf, Matthias Duval, Tarnier, Hayem Tillaux, and M. Gréard, Vice-Rector of the Academy of Paris, together with many of Professor Ball's former *chefs de clinique*, internes and pupils. The pall-bearers were Professor Brouardel, Dean of the Faculty, M. Darboux, Dean of the Academy of Sciences, Dr. Peyron, director of the Assistance Publique, and Dr. Bergeron, representing the Academy of Medicine, of which the deceased was a distinguished member. In deference to the express wish of the deceased, the usual French custom of delivering eulogistic speeches at the grave was omitted. The hearse was followed by deputations of nurses from Laennec Hospital and St. Anne's Asylum in caps and aprons. Huge wreaths of natural flowers, chiefly Parma violets, were conspicuous in the procession, the senders being the Association des Etudiants, the nurses above mentioned and his old pupils, the inscription on the latter wreath being, *A leur Professeur Ball.*

Benjamin Ball was born at Naples on April 20th, 1833, his father being English and his mother Swiss, a scion of the ancient Huguenot family of Autran. Naturalised as a Frenchman in 1849, he became an *externe* in 1854, an *interne* in the following year and *chef de clinique* in 1863. During his *internat* he was *lauréat des hôpitaux* and Laureate of the Academy of Medicine (Prix Portal, in collaboration with M. Charcot). In 1866 he became *professeur-agrégé*, his thesis being entitled "Du Rhumatisme Viscéral et du Rhumatisme Cérébral." In 1870 he was appointed a hospital physician. Seven years later the new chair of Mental Medicine was created expressly for him. His lectures, delivered every Sunday morning in the theatre of St. Anne's Asylum, were remarkable for their lucidity and for the pure and beautiful idiomatic French in which they were couched. No wonder, then, that the theatre was always crowded to overflowing, all nationalities being represented amongst his delighted hearers. He quickly became idolised by students, to whom he was ever most kind. More especially was this the case with English and American students, who never failed to find in him a true friend. The following is as complete a list of the late Professor Ball's works as is available at the present juncture: "Leçons sur les Maladies Mentales" (900 pages, 1883), "De la Morphinomanie" (second edition, 1888), "De la Folie Erotique" (1 vol., 1887). "La Claustrophobie" (*Annales Médico-Psychologiques*, 1879), "Ischémie Cérébrale Fonctionnelle," "Les Impulsions Intellectuelles," "Phthisie et Folie," "La Torpeur Cérébrale," "La Stigmatisée de S——," "L'Insanité dans la Paralysie Agitante" (Congrès de Londres, 1881), "Le Crétin des Batignolles," "Les Familles des Aliénés" "Responsabilité Partielle des Aliénés," "L'Aliéné devant la Société," "La Folie du Doute," "La Dipsomanie," "Les Frontières de la Folie," "La Folie Gémellaire," "L'Hébéphrenie ou Folie de la Puberté," "La Folie à Deux," "Epilepsie avec Conscience," "Folie Consécutive au Choléra" and "Hallucinations de l'Ouïe Consécutives à une Inflammation de l'Oreille Moyenne" (all the articles preceding were published in the *Encéphale*, which he founded and edited with M. Luys). In the *Dictionnaire Encyclopédique des Sciences Médicales* he wrote with M. Ritte on Delirium, and with M. Chambard on Acute Delirium, Delirium Tremens, Dementia, Sleep and Somnambulism. In the neuropathic field he contributed the following papers: "Des Arthropathies Liées à l'Ataxie Locomotrice," "De l'Erythème Symptomatique des Tumeurs Cérébrales," "Mal Perforant du Pied dans l'Ataxie Locomotrice" (London Congress, 1881, in English); and "Tumeurs et Abcès du Cerveau." To these must be added eleven papers (including his Thesis for the Doctorate in 1862 on Pulmonary Embolism) on general medicine. Dr. Ball was a Member of the Academy of Medicine, and corresponding member of learned societies in London, Lisbon, New York, Glasgow &c. Glasgow University conferred on him, on the occasion of the last meeting of the British Medical Association held there, the honorary degree of LL.D. He was very proud of this distinction. He spoke fluently no less than seven languages. Three years ago he presided at the annual banquet of the Continental Anglo-American Medical Society and made on that occasion an admirable speech. Indeed, he always delighted in being surrounded by Englishmen, of whom he was particularly fond. He was an inveterate chess-player. His house was always open to students, and it may truly be said that no larger-hearted couple ever existed than Dr. and Madame Ball. It may be mentioned that Madame Ball's father was M. Carrier-Belleuse, who, after being Director of the Wedgwood-Minton works at Stoke-upon-Trent, became Artistic Director of the celebrated Sèvres Manufactory. Her two brothers are well-known artists. Dr. Ball was for many years a valued contributor to the columns of THE LANCET.

MEDICAL TRIAL.

ROYAL COLLEGE OF PHYSICIANS OF LONDON *v.* GENERAL MEDICAL COUNCIL.

IN the action of the Royal College of Physicians of London claiming a declaration that at the date of the passing of the Medical Act, 1886, they were entitled to grant a diploma in respect of medicine and surgery, and to hold such qualifying examination in medicine, surgery and midwifery as mentioned in the Medical Act of 1886, of which a summary appeared in THE LANCET of last week, judgment was delivered on Wednesday last by Lord Justice A. L. Smith as follows:—

The question for determination is whether the defendants, the General Council of Medical Education and Registration of the United Kingdom, are entitled to place upon the Register of medical practitioners the name of a Fellow, Member or Licentiate of the Royal College of Physicians of London, who produce to the defendants' Registrar a diploma granted by the plaintiffs to practise physic, including therein the practice of medicine, surgery and midwifery. The answer to be given to this question depends upon this single point—viz: "Was the Royal College of Physicians of London at the date of the passing of the Medical Act, 1886 (49 and 50, Vict., c. 48) a medical corporation legally qualified to grant a diploma in respect of medicine and surgery?" It is not disputed that the applicant for registration in the present case had been efficiently examined by the plaintiffs in each of these three subjects and that the requisite evidence as to this was forthcoming. The defendants admit that the plaintiff corporation is legally qualified to grant a diploma in respect of medicine, but the position they take up is that it is not a corporation legally qualified to grant a diploma in respect of surgery. By the Medical Act, 1858 (21 & 22 Vict., c. 90) the defendants, the General Council, were created, and it was therein enacted that a Register of medical practitioners should be kept. Section 14 prescribed the duty of keeping this Register; and Section 15 provided for the registration of practitioners. By this section every person thereafter becoming possessed of, amongst others, the qualification of Licentiate of the Royal College of Physicians of London, became entitled to be registered on producing to the Registrar the document conferring or evidencing the qualification, whereof he sought to be registered, which in this case consisted of the diploma of the Royal College of Physicians of London, issued by them to their licentiate to practise physic, including therein the practice of medicine, surgery and midwifery. It will be noticed that it is upon the production of the diploma that the applicant is entitled to be registered and that the Medical Council under this Act could raise no question as to where, when, or in what the applicant had been examined. It is only by Sections 20 and 21, if the Council thought that the course of study and examination prescribed by any college or body was not sufficient, that they might intervene, and then could only make a representation thereof to the Privy Council, who might suspend the right of registration if it thought fit. The Medical Council could not refuse to register if the requisite diploma were produced. So matters continued for nearly thirty years down to the passing of the Medical Act of 1886, when for the first time it was enacted that no person should be registered under the Medical Acts in respect of any qualification unless he had passed a qualifying examination in medicine, surgery and midwifery, held by, amongst other bodies, "a medical corporation legally qualified at the date of passing of that Act to grant a diploma in respect of medicine and surgery." Was, then, the Royal College of Physicians of London such a corporation in 1886? That is the point. By charter granted by Henry VIII., dated Sept. 23rd, 1518, being the tenth year of his reign, the President, and College, and Commonalty of the Faculty of Physic in London, better known as the Royal College of Physicians in London, were incorporated to exercise medicine (Medicina) in the City of London and the suburbs, and within seven miles from the City on every side. It was by this charter granted that no one in the City, or for seven miles in circuit of the same, should exercise the faculty of medicine unless admitted thereto by letters of the President and Commonalty, sealed with their common seal. By the 14th and 15th Henry VIII., c. 5 (1522), this charter was confirmed, and by Section 3 it was enacted that no person from thenceforth be suffered to exercise or practise physic through England until such time as he be examined at London by the said President and three elects, and to have from them letters testimonial of their approving and examination. There was an exception made in this Act in favour of graduates of Oxford and Cambridge. Eighteen years afterwards—viz., in 1540—an Act was passed (32nd Henry VIII., c. 40) relating to physicians and their privileges. Section 3 is most important, and I set it out at length: "And forasmuch as the science of physic doth comprehend, include and contain the knowledge of surgery as a special member and part of the same; therefore be it enacted that any of the same company or fellowship of physicians may from time to time as well within the city as elsewhere within this realm, practise and exercise the said science of physic in all and every his members and parts, any Act, statute or provision made to the contrary notwithstanding." Here, it will be seen, is a direct recognition by statute that the science of physic comprehended, included and contained the knowledge of surgery as a special member and part thereof, and that the statute granted to the Company or Fellowship of Physicians the privilege of practising such science of physic within the realm, notwithstanding any Act, statute or provision to the contrary. In my judgment this statute shows that the word "medicina," which, in English, is equivalent to the word "physic," at that time at any rate embraced the general art of healing, whether by drugs or surgery, and was not confined to the healing by drugs, as was argued on behalf of the defendants. It appears that from the earliest time down to recent date the diploma granted by the plaintiffs and their predecessors to their Fellows and Licentiates was, as far as material, in the following form:—"Ego, A. B., Præsidens hujus collegii, admitto te ad medicinæ facultatem tam docendam quam exercendam." It is not denied by the defendants that the Fellows and Licentiates who obtained these diplomas have been accustomed to practise as general practitioners in medicine, surgery and midwifery, or in either as to them seem best. Sir Horace Davey, for the defendants, commenced with the Charter of 1st Edward IV. granted to the barbers and traced down the history of the surgeons from this through 3rd Henry VIII. (1511), an Act purporting to relate to the appointment and examination of persons to act as physicians and surgeons within the City of London and seven miles round (though when the Parliament roll was examined it was found that, as the Act originally stood, upon the roll it applied solely to physicians, and that the word surgeons for some reason or other had since been interpolated) through 32nd Henry VIII., c. 42, uniting the barbers and surgeons into one whole body corporate, through the Charter of 5th Charles I., granted to the surgeons and through 18th George II., c., 15, whereby the surgeons became incorporated and of which incorporation the Royal College of Surgeons is the direct successor, and through other Acts prior or subsequent thereto. He argued that from these documents, taken together with those cited by the plaintiffs, it appeared that there was the faculty of medicine as distinguished from the faculty of surgery, and he urged, and with force, that these two faculties from the earliest times had run upon totally different lines; and he urged that physicians had nothing to do with surgeons. He pointed out what I think was the fact, that although the College of Physicians from the year 1582 held lectures in surgery called Lumleian lectures, that although their examinations prior to 1835 were: "In primis comities in parte Medicina Physiologicâ; in secundis in parte Pathologica; in tertiis in parte Theurapeutica"—which, Dr. Liveing said, was as much in surgery as medicine, and since that date embraced the obstetric art and principles of surgery, yet it was not till the year 1862 that the first real effective examination in surgery itself was made by the plaintiffs, who then called to their assistance Mr. Erichsen to examine, and since then they have ever had an eminent surgeon to aid them in the examination in surgery of those of their students whom they examined themselves. I should mention that since 1884 the plaintiffs, in conjunction with the Royal College of Surgeons, have held joint examinations of those students who had commenced their studies since that date, and these examinations still continue. Sir H. Davey argued that the construction placed by the Solicitor-General upon Section 3 of the 32nd Henry VIII., c. 40, was erroneous. I incline to the opinion that Sir Horace Davey placed the correct construction upon this section when he insisted that the privileges granted by it were confined to the "company or fellowship of Physicians," which he read

as equivalent to "commonalty or fellows" of that body. But be this as it may, it does not affect the point as to whether the paintiffs could grant a diploma in medicine and surgery. I think, too, that he was correct when he said that surgeons and physicians had run in distinct lines from the earliest time. But this is not what I have to decide. The point is, were the plaintiffs a Medical Corporation in 1886 legally qualified to grant a diploma in respect of medicine and surgery? The Solicitor-General's reply to the argument of Sir H. Davey appears to me conclusive. He said, "For the purposes of this case, I accept Sir H. Davey's reading of the section; for he admits that the plaintiffs could grant a diploma to their commonalty or Fellows, to practise in medicine and surgery, and," said the Solicitor-General, "that is all that is required, for this brings the plaintiffs within the exact terms of the Act—viz., a Medical Corporation legally qualified to grant diplomas in respect of medicine and surgery." He said, "whether physicians and surgeons ran in different grooves did not affect the point to be determined." In my judgment the Solicitor-General is right when he says, "Once get the Corporation legally qualified to grant the diploma, and then they are the persons who are designated by the statute to hold the examination." This argument appears to me to be unanswerable. It has been established that the plaintiffs were at the date of the passing of the Act of 1886 a corporation legally qualified to grant diplomas in respect of medicine and surgery, and that in my judgment concludes this case. For these reasons, in my opinion, the plaintiffs are right and are entitled to judgment and the declaration asked for, and they must have the costs of the action.

Sir H. Davey, Q.C., asked what would be the terms of the declaration.

Sir Arthur Watson, Q.C., thought they should be in the words of the statement of claim.

Sir H. Davey: All we want is that the plaintiffs themselves are a Medical Corporation legally qualified to grant diplomas in medicine and surgery.

Sir A. Watson: There is no objection.

Sir H. Davey: The statement of claim is rather aggressive in its tone. You do not ask for an injunction.

Sir A. Watson: After what Sir Horace Davey has said, I cannot imagine as to the body he represents that that course would be necessary.

Lord Justice Smith: It was merely a friendly suit, I take it.

Sir A. Watson: Then, my lord, the declaration, with liberty to apply?

Lord Justice Smith: Very well. I have no doubt these gentlemen will do what is right.

Judgment accordingly.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AT an ordinary meeting of the Council of the College held on Thursday, the 9th inst., the President, Mr. Thomas Bryant, occupied the chair.

The Secretary reported the death, on Jan. 12th last, at the age of seventy-eight, of Mr. Alfred Baker, past member of the Council, and the Council unanimously recorded their deep regret at the death of one whom they highly esteemed, both as a colleague and as a member of the profession, and expressed their sympathy with his widow and family in their bereavement.

The Council elected Mr. H. P. Dean an examiner in Elementary Biology under the Combined Examining Board in England.

The following resolution was carried *nem. con.*: At a meeting of the Council of the Royal College of Surgeons of England, held on the 9th inst., it was resolved "that it is degrading to the profession and injurious to the public interest that Fellows or Members of the College should associate themselves with trading institutions for the treatment of disease and allow their names to be advertised in support of the practice of medicine and surgery by persons not legally qualified."

It was resolved unanimously that a marble bust of the late Sir Richard Owen, K.C.B., be obtained at a cost not exceeding 200 guineas.

A letter from Sir Ralph Thompson, K.C.B., in reference to the arrangements for the Army Medical Examinations, was read and entered on the minutes.

The best thanks of the Council were given to Mr. W. Hunter Baillie for his present of John Hunter's consulting-table.

It was proposed by Mr. Hulke, and seconded by Mr. Macnamara, and agreed to: "That the Council, having learned that it is proposed, under the control of the London County Council, to open the gardens of Lincoln's-inn-fields to the public, request the President and Vice-Presidents to put themselves in communication with the promoters of the Bill, with the object of securing the insertion of such conditions as they may think desirable."

Medical News.

EDINBURGH UNIVERSITY.—The following gentlemen received the degrees of M.B., C.M., on Jan. 28th, 1893:

Joseph P. S. Barboza, Edinburgh (or Madras); John W. Craig, Castle Douglas; Samuel Davidson, Edinburgh; Robt. B. Gass, Durham; Geo. S. S. Hirst, Cambridge; Habeeb H. Khayatt, Assiout, Egypt; Henry C. Lloyd, Melbourne, Australia; Thomas G. Macormack, Edinburgh; Ernest C. Quertier, Guernsey; George P. Richards, Herefordshire; Fred. W. M. Stephenson, Blackburn, Lancashire; Arthur H. H. Vizard, Halifax, Nova Scotia.

FOOTBALL CASUALTIES.—During a game at Newry, Armagh, on the 25th ult., a player fractured his leg. A young man of East Dereham has died from lockjaw, caused by injuries sustained whilst playing in a match a few days since.

MEDICAL MAGISTRATES.—Dr. Henry C. March of Rochdale has been placed on the Commission of the Peace for that borough. The following gentlemen have been appointed Justices of the Peace for the county of Aberdeen:—Dr. Wm. Alexander of Tarland; Brigade-Surgeon-Lieutenant-Colonel Wm. Johnston, M.D. Edin., of Newton Dee, Murtle; Dr. David Maver of Buxburn; Dr. P. Mitchell of Old Rain, Insch; Dr. J. Reid of Dinnet; and Dr. Wm. L. Ross of Cuminestown, Monquhitter.

DR. CECCARELLI'S WILL.—Of the eight hundred thousand francs (£32,000) left by the Pope's late physician, about one-half has been bequeathed to the commune of Rome, to be invested and the interest devoted to the institution of beds in the hospitals of the city for the sick Roman poor. Dr. Ceccarelli, besides, has left to the hospital at Velletri his rich medical library and his splendid "armamentarium chirurgicum," comprising the instruments he himself invented. The library and "armamentarium" are valued at forty thousand francs (£1600).

OPHTHALMIA AMONG CHILDREN.—At their meeting on Tuesday last the members of the Central London School District came to an important decision in respect of this subject. The success of the means adopted by the managers of the Hanwell school, founded for the treatment of ophthalmia, has induced them to receive within their partially occupied buildings children affected with the disease from any parish within the metropolitan Poor-law area for a period of two years. After that time shall have expired it is expected that another body will be elected to control the management of the establishment.

THE METROPOLITAN PUBLIC GARDENS ASSOCIATION.—Few public movements designed to improve the condition of the poorer classes of the metropolis are more worthy of support than that named in the heading of this paragraph. The work already accomplished by this Association is set forth in its tenth annual report, by which it will be seen that its operations have been fraught with widespread advantages to the inhabitants of the metropolis, especially to those who are compelled to live in close and, for the most part, squalid neighbourhoods. The opening of a large number of playgrounds, the improving of commons, the planting of trees in thoroughfares, the provision of seats for weary pedestrians, and the erecting of fountains for thirsty travellers have been some of the results of the labours of the Society's executive. Nothing more need be said to strengthen the appeal which the Earl of Meath has published in the newspaper press on behalf of the Association over which he presides. It should not be difficult in a wealthy city like London to raise the comparatively trifling sum (£4000) required to carry on the work which has been so successfully begun.

THE INTER-HOSPITAL FOOTBALL MATCH.—In the match for the final tie for the Rugby Union Inter-hospital Challenge Cup, played at Richmond on Thursday, March 9th, between Guy's and St. Thomas's Hospitals, the St. Thomas's team were the victors by eight points to five, thus winning the cup five years in succession. The match was very close and interesting.

MISSION TO DEEP-SEA FISHERMEN.—To awaken increased interest in this movement it has been announced that a lecture will be delivered by Mr. W. T. Grenfell, M.R.C.S., at the Vestry Hall, Hampstead, on Monday next, at 7 P.M. The chair will be taken by Mr. Frederick Treves. The lecturer will describe the incidents connected with his recent cruise in the *Albert* Hospital Mission vessel to Newfoundland and Labrador, and the lecture, which will be illustrated by lime-light views, will no doubt prove of considerable interest.

LIÈGE MEDICAL STUDENTS.—The medical students of the University of Liège have formed a society for visiting patients who after their discharge from the hospital are in indigent circumstances, the students' object being to take them meat, wine and nourishing articles of diet and to supply them with creature comforts as well as to cheer them by their visits, so that convalescence may be hastened. Many charitable persons are assisting the society to obtain what is required, and a concert is being organised for its benefit, with 450 performers.

FUNERAL REFORM.—The Rev. Rabbi Adler took this subject for an address delivered at the monthly meeting of the Funeral Reform Association, Canon Barker presiding. The methods adopted by the lecturer and his co-religionists in consigning their dead to the grave were described, the prominent feature of such procedures being the punctilious regard to cleanliness observed by the Jews. The ancient custom was to bury in the earth without the use of coffins. No corpse was allowed to remain above ground for more than two days. No second interment was permitted in the same grave. As with all religious ceremonies amongst the Jews, the mourners at the grave-side remain covered.

THE MEDICAL SOCIETY OF LONDON.—The annual dinner of the Medical Society of London was held in the Whitehall Rooms of the Hôtel Métropole on the 8th inst., Mr. Hutchinson, President, being in the chair. A large number of Fellows were present and amongst the guests were several well-known members of the profession in London. The feature was the appearance of the Presidents of several of the provincial medical societies. After the loyal toasts, "The Success of the Medical Society of London" was proposed by the President. At the conclusion of his speech he presented Dr. Gowers with the Fothergillian Gold Medal and prize for the excellence of his contributions to medical literature, which was awarded by the vote of the Council. This is the first occasion in the history of the Society upon which this prize has been adjudicated in this manner and given as it were without competition or without the sending in of names or theses. The action of the Council was enthusiastically endorsed by the Fellows present. Dr. Douglas Powell proposed the health of the incoming president, Dr. Bristowe. During the course of the evening songs by Dr. Frederick Roberts and Dr. Samuel West were highly appreciated.

BEQUESTS AND DONATIONS TO HOSPITALS.—The late Mr. John Hale of Liverpool bequeathed his personal estate, amounting to between £2000 and £3000, in trust for the equal benefit of the Royal Infirmary, the Royal Southern Hospital and the Northern Hospital, Liverpool.—Mrs. Phœbe S. Croker, late of Lavenham, bequeathed £100 to the Suffolk General Hospital.—Miss Mary E. Lumby, late of Halifax, bequeathed £100 to the Halifax Infirmary.—The late Miss Jane Boyd of Wallacetown, Ayr, bequeathed £100 to the Ayr County Hospital.—Mrs. Frances S. Cary, late of Southampton, bequeathed £100 to the Royal South Hants Infirmary.—Mr. Thomas F. Maddock, late of Chester, bequeathed £100 to the Chester Infirmary.—The late Miss M. C. Simms of Clevedon bequeathed £500 to the Royal Dispensary, Bartholomew-close, London.—The Grocers' Livery Company has made a grant of £50 to the Hospital for Epilepsy and Paralysis, Regent's Park.—The Treasurer of the Manchester Hospital for Consumption has received £500 from the executors of the late Mr. James Chadwick.—The late Dr. Thomas Hawksley of Chertsey bequeathed £500 to King's College Hospital, £200 to the Medical Benevolent Fund and £100 to the Medical Benevolent College at Epsom.

NOTES IN PARLIAMENT.

ON going into Committee of Supply on the Army Estimates, Mr. Lockwood has, we learn from *The Times*, expressed his intention to move for a select committee to inquire into the refusal of the Horse Guards to reinstate Mr. Briggs, who resigned his commission in the army in order to be at liberty to give evidence in the Connemara case. On March 22nd, last year, Mr. E. Stanhope, in reply to a question in the House, expressed his opinion that Mr. Briggs should not suffer loss of promotion on account of an act which he was bound to perform and stated that he would therefore be restored to the seniority he formerly held. Subsequently, however, a letter appeared in a Service journal giving an account of the matter which Mr. Briggs held to be unfair and to which he therefore replied in the same journal. This reply appears to have been regarded by the authorities as in some way a breach of discipline, and he was accordingly informed that unless he withdrew certain statements in his reply, and publicly apologised, his reinstatement would not be permitted. Mr. Briggs, in his defence, reminded the authorities that as his commission had not been regazetted he was not subject to military discipline; he added that he could not withdraw his letter, as by doing so he would be practically acknowledging that the statements contained therein were untrue. He was, however, willing to express his deep regret if he had unconsciously used words which might be understood as conveying unwarrantable imputations upon anyone, and was ready to apologise for them. Some further correspondence has passed between Mr. Briggs and the War Office, but it is understood that the latter refuse to reopen the question.

The Sale of Food and Drugs.

Dr. Cameron has introduced a Bill to Amend the Sale of Food and Drugs Act (1875) and the Margarine Act (1887). It provides that the former Act shall apply to, and include, every wholesale trader or manufacturer of any article of food or drug who shall sell to the prejudice of the purchaser any article of food or drug which is not of the nature, substance and quality demanded. Another clause amends the Act of 1875 by omitting the word "written" before the words "warranty to that effect." A third deals with the mixture of chicory and coffee, and a fourth defines what proportion of water in butter shall constitute adulteration.

New Hospital for Poor Sick Jews.

Sir John Kennaway asked the Under-Secretary of State for Foreign Affairs whether he would make inquiries, through Her Majesty's Ambassador at Constantinople, as to the reason of the long delay in granting the firman applied for, for the erection of a new hospital for poor sick Jews on the Jaffa road, outside the walls of Jerusalem, for which a site had been purchased and £5000 provided to begin the building; and whether Her Majesty's Secretary of State for Foreign Affairs would move Sir Clare Ford to use his best endeavours to facilitate and expedite the granting of the firman.—Sir Edward Grey replied that this matter was receiving the attention of Her Majesty's Ambassador at Constantinople.

Glanders and Farcy in London.

Mr. Edward H. Bayley asked the President of the Board of Agriculture whether, in view of the alarming increase of glanders and farcy in London, upwards of 2000 cases having occurred in 1893, being 90 per cent. of the cases in the country generally, and the fact that glanders and farcy are contagious as regards human beings as well as horses, he would take measures to stamp out the disease by means of a system of inspection of stables and compulsory slaughter of infected horses, with or without compensation of owners.—Mr. Herbert Gardner, in reply, referred to the order he issued recently, and intimated that the number of outbreaks recorded since the commencement of the present year was less than in the corresponding period of 1892. There was no cause whatever for alarm on the subject, but he was carefully watching the operation of the new order with a view to determine whether any further action on his part was necessary.

Small-pox and Vaccination.

In reply to a question put by Mr. Hopwood, Mr. Campbell-Bannerman stated that five militiamen at Halifax were attacked with small-pox and were removed to civil hospitals, and the troops were confined to barracks for three days. None of the men attacked had been revaccinated. He had been advised by the medical authorities that vaccination and revaccination acted as a sure prevention to small-pox, but he did not regard himself as an authority on the matter. The subject was also referred to on the 3rd inst., when, in reply to another question by Mr. Hopwood, Sir Walter Foster said he had been informed by the guardians of the Wigton Union that a fatal case of small-pox had occurred at the workhouse on Feb. 3rd, and that the medical officer deemed it necessary under the circumstances that a child who occupied a ward close to that in which the small-pox patient had died should be vaccinated. The mother, however, objected, but the operation was ordered by the guardians to be performed. In the opinion of the Local Government Board it was not legal for th

children of inmates of a workhouse to be submitted to vaccination if the parents objected.

Hemp Drugs in Bengal.

On this subject Mr. Caine put a question to Mr. G. Russell, who said that the Secretary of State had proposed to request the Viceroy to appoint a Commission to inquire into the cultivation and trade in hemp drugs, and would be glad if the result of the inquiry would be to show that further restrictions could be placed upon the sale and consumption of those drugs. Instructions would be given to ensure that the inquiry by the Commission, which would be composed in part of non-official natives of India, should be as complete as possible, but the methods of procedure were to be left to the discretion of the Commission. Mr. G. Russell, moreover, stated, in reply to another question put to him, that it was not contemplated that the Commission should deal with the opium question.

Cholera Hospitals (Ireland) Bill.

Mr. J. Morley introduced a Bill to enable sanitary authorities in Ireland to take possession of land for the erection of temporary cholera hospitals. The Bill was subsequently read a second time.

Medical Officers and Public Bodies.

On the 3rd inst. in answer to Mr. Weir, Mr. Shaw-Lefevre said he had been wrongly reported in the press as having come to an adverse opinion on the subject of the ventilation of the House of Commons. In consequence of the recommendations of the Committee appointed for the purpose great improvements had already been effected.

Dresden Sanitary Conference.

On the 6th inst. Sir E. Grey stated, in reply to a question put by Mr. J. W. Lowther, that Her Majesty's Government had consented to take part in the Dresden Conference, which was expected to meet on the 11th inst. The British representatives would be Mr. Strachey, the Minister Resident at Dresden, and Dr. Thorne Thorne of the Local Government Board, assisted by Mr. Farnall of the Foreign Office.

The Health of our Troops in India.

Mr. G. Russell, in answer to a question by Mr. Caine, said that the rate of admissions to hospital from venereal diseases per 1000 of strength in 1890 (the last year for which complete statistics had been received) was—British troops, 503·5; native troops, 41·1.

Tuberculosis.

On the 7th inst. Mr. W. Whitelaw asked for the number of cases of tuberculosis in home-bred cattle whose carcases were condemned last year on account of tuberculosis. Mr. Gardner expressed his inability to supply the information asked for

Pleuro-Pneumonia.

Mr. Macartney called attention to the subject of the introduction of this disease into the United Kingdom by the importation of foreign cattle, and moved a resolution to the effect that no foreign animal, with certain exceptions, having been allowed to be landed, should be suffered to leave the wharf alive. The resolution was discussed at considerable length. The Solicitor-General pointed out that if the stipulation of the Act of 1878 were reasonably satisfied no danger of such importation would arise.—Mr. Gardner said the resolution was opposed to the general principles of free trade and he hoped the House would reject it.—Mr. Chaplin supported the resolution. He said we had now arrived within a measurable distance of being quite free from pleuro-pneumonia in the future; but in order to attain this object it was essential that all animals arriving in this country should be immediately slaughtered. The resolution was rejected by a majority of 186 against 151.

Public Health.

On the 8th inst. Sir H. Roscoe brought in a Bill to amend and extend the Public Health (London) Act, 1891.

The Sanitary Condition of Thames Tugs.

Mr. Havelock Wilson asked the President of the Local Government Board whether he was aware that the medical officer of the port of London had declared that in many cases the tug-boats on the River Thames were in an insanitary condition, particularly with regard to the source of drinking water which was taken from the river, and which he described as a most dangerous proceeding; and what steps could be taken to prevent the development of disease among the floating population through this practice.—Mr. Fowler replied that he had communicated with the Medical Officer of the Port of London on the subject of this question, and he informed him that there was some foundation for the report as to the insanitary condition of some of the steam tugs on the Upper Thames, although it could not be said that generally they were in a bad state. He was making a close and careful inspection of these tugs, and was requiring that defects should be remedied. In the case of any tugs where it was known that water had been obtained from the river, the medical officer insisted upon the emptying of the water vessels, and, after warning the master of the tug as to the danger, communicated with the owners, with the view to such instructions being given as would prevent the use for drinking purposes of water taken direct from the river.

The Proposed Fever Hospital at Tooting.

Mr. Fowler, in reply to a question put by Mr. Kimber, informed him that the experienced inspectors who conducted the inquiry as to the proposed fever hospital acted in accordance with the practice of the Local Government Board and he saw no reason for interfering with their discretion. The inquiry was limited to the proposal to acquire a specified site and such an inquiry could not properly have been extended to other sites in respect of which there was no proposal of the Managers of the Metropolitan Asylum District before the Local Government Board and with regard to which no notice had been given to those interested in the localities where the sites were situated. Any information that could be given as to sites which were available for hospital purposes, and which were considered to be more suitable than the site in question, should be submitted in the first instance to the Asylum Managers, and he should be prepared to receive and consider a copy of any communication which might be addressed to the Managers on the subject.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ALLOTT, JAS. H. L., M.B., C.M. Edin., has been appointed Honorary Surgeon to the Beckett Hospital and Dispensary, Barnsley.

BLACKHAM, ROBERT J., L.R.C.P., L.R.C.S.E., L.F.P.S. Glasg., L.M. (Rotunda Faculty), has been appointed Physician to the Sidcup Hospital, London, S.E.

BLAKISTON, A. A., M.R.C.S., has been reappointed Medical Officer of Health for the Borough of Glastonbury.

BROWN, STANLEY M., M.R.C.S., L.R.C.P. Lond., has been appointed Junior House Surgeon to the Salford Royal Hospital, vice Newby, appointed House Surgeon.

BURNETT, J. R., M.B., C.M. Edin., M.R.C.S., has been appointed House Physician to the Hospital for Consumption and Diseases of the Chest, Brompton.

CALLAGHAN, THOS., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed an extern Physician to the Cork Fever Hospital.

CODD, F. R., L.R.C.P., L.M., L.R.C.S. Irel., has been appointed Medical Officer to the Dublin Commercial Medical Aid Association.

COLMER, P. A., L.S.A., has been appointed Honorary Medical Officer to the Yeovil District Hospital, vice Garland, resigned.

DONELAN, JOHN O'CONNOR, Lic. & L.M. R.C.S. & R.C.P. Irel., M.P.C., has been appointed Assistant Medical Officer to the Richmond District Lunatic Asylum, Dublin.

DUNCAN, R. B., M.B., B.S. Durh., has been appointed Visiting Medical Assistant to the Newcastle-on-Tyne Dispensary.

GILES, ARTHUR E., M.D., B.Sc. Lond., M.B., Ch.B. Vict., M.R.C.P., M.R.C.S., has been appointed Physician-Accoucheur to the St. Pancras and Northern Dispensary, Euston-road, N.W.

HASLAM, W. ARTHUR, L.R.C.P. Lond. M.R.C.S., has been appointed Junior House Surgeon to the London Temperance Hospital, Hampstead-road.

HINE, ALFRED ERNEST, M.R.C.S., L.R.C.P. Lond., has been appointed Resident Obstetrical Officer to the Charing-cross Hospital.

HUNTER, W. L., M.D. Dub., B.Ch., D.P.H. Eng., has been reappointed Medical Officer for the Third Sanitary District of the North Bierley Union.

KARKEEK, P. C., M.R.C.S., has been reappointed Medical Officer of Health for St. Marychurch, Torquay.

MENZIES, JAS., L.R.C.P., L.M., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health to the Shirecoaks Sick Club, Worksop.

MOORE, SAMSON G., M.B., B.S. Victoria Univ., has been appointed Assistant Port Sanitary Medical Officer, Liverpool.

NEWBY, GERVASE E., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon to the Salford Royal Hospital, vice Heywood, resigned.

PRATT, JOHN W., L.R.C.P., L.M. Edin., M.R.C.S., has been reappointed Medical Officer of Health for the Wivelscombe Urban Sanitary District of the Wellington Union.

RAW, NATHAN, M.D., B.S., L.S. Sc., Senior House Surgeon, Bolton Infirmary, has been appointed Medical Superintendent of the Dundee Royal Infirmary, vice M'Cosh, resigned.

RICE, B., M.D. Lond., M.R.C.S., has been appointed Police Surgeon for the Borough of Leamington.

SAVAGE, THOMAS, M.D., M.R.C.P. Lond., F.R.C.S. Eng., has been appointed Professor of Gynæcology in Mason College, Birmingham, vice Tait, resigned.

SEGUNDO, CHAS. SEMPILL DE, L.R.C.P. Lond., M.R.C.S., has been appointed House Surgeon to the London Temperance Hospital, Hampstead-road.

TAYLOR, JAMES, M.A. Edin., M.B., M.D., M.R.C.P. Lond., has been appointed Assistant Physician at Queen-square Hospital.

WEBB, C. F., M.D. Durh., F.R.C.S., F.R.C.P. Edin., M.R.C.S., has been reappointed Medical Officer of Health for the First Sanitary District of the Basingstoke Union.

YOUNG, E. H., M.D. Durh., L.R.C.P. Lond., M.R.C.S., D.P.H., has been reappointed Medical Officer of Health for the Oakhampton Rural and Urban Sanitary Districts.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Junior House Surgeon. Salary £50 per annum, with board, lodging, washing &c.

BOARD OF WORKS FOR THE POPLAR DISTRICT.—Medical Officer of Health for the Poplar and Bromley parishes. Salary £400 per annum. Apply to the Clerk to the Board, Offices, 117, High-street, Poplar.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—House Surgeon for six months. Salary at the rate of £50 per annum, with board and residence.

DENTAL HOSPITAL OF LONDON, Leicester-square.—Assistant Anæsthetist.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark-bridge-road, S.E.—Surgeon to Out-patients.

FARRINGDON GENERAL DISPENSARY, Bartlett's-buildings, Holborn-circus, E.C.—Surgeon.

GENERAL HOSPITAL, Birmingham.—Assistant Surgeon for three years. Honorarium £100 per annum.

GENERAL HOSPITAL, Birmingham.—Pathologist (non-resident). Salary £120 per annum.

GENERAL HOSPITAL, Birmingham.—Assistant House Surgeon for six months. Residence, board and washing provided.

HARTLEPOOL HOSPITAL.—House Surgeon. Salary £60 per annum, with board, lodging and washing.

LIVERPOOL ROYAL INFIRMARY.—Honorary Laryngologist and Honorary Dermatologist.

LONDON COUNTY ASYLUM, Claybury, Woodford, Essex. — Second Assistant Medical Officer. Salary £180 per annum, rising £10 a year to £230, with board, lodging and washing. Apply to the Clerk to the Asylums Committee, Office, 21, Whitehall-place, S.W.

MANCHESTER ROYAL INFIRMARY (Monsall Fever Hospital.)—Assistant Medical Officer at Monsall Fever Hospital (unmarried), for twelve months. Salary £100 per annum, with board and residence.

MASON'S COLLEGE, Birmingham.—Co-Professorship of Surgery.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Physician for six months. Salary at the rate of £60 a year.

METROPOLITAN HOSPITAL, King-land-road, N.E.—House Surgeon for six months. Salary at the rate of £60 a year.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Assistant House Surgeon, for six months.

ROYAL COLLEGE OF PHYSICIANS, Pall-mall East, S.W. — Milroy Lecturer.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—House Physician for six months. Salary at the rate of £40 per annum, and board and lodging.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN, Marylebone-road, N.W.—Two Physicians to the Out-patient department.

SEAMEN'S HOSPITAL SOCIETY, "DREADNOUGHT."—Senior and Junior House Surgeons for Branch Hospital, Royal Victoria and Albert Docks, E. Salaries £75 and £50 per annum, with board and residence. Apply to the Secretary, Seamen's Hospital Society, Greenwich, S.E.

SHEFFIELD CHILDREN'S HOSPITAL, East-end Branch.—Resident House Surgeon. Salary £70, with board, lodging and washing.

ST. PETER'S HOSPITAL FOR STONE AND URINARY DISEASES &c., Henrietta-street, Covent-garden.—House Surgeon for six months. Honorarium 25 guineas, board, lodging and washing.

ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck-street, W.—An additional Honorary Surgeon.

ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck-street, W.—An additional Honorary Physician.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, Plymouth.—Assistant Secretary. Salary £150 per annum.

ST. AUSTELL UNION, Cornwall.—Medical Officer for the Union Workhouse. Salary £15 per annum, exclusive of certain fees &c.

STOCKPORT INFIRMARY.—Assistant Medical Officer. Salary £70, with board and residence.

WESTBOURNE PROVIDENT DISPENSARY, Harrow-road.—Medical Officer. Applications to be sent to the Secretary, 27, Westbourne-park-crescent, W.

WORCESTER GENERAL INFIRMARY.—House Surgeon for three years. Salary £100 per annum, with board and residence.

Births, Marriages and Deaths.

BIRTHS.

CALLAGHAN.—On March 3rd, at Brookfield, Colyton, Devon, the wife of James Leslie Callaghan, L.R.C.P.E., L.R.C.S.I., of a daughter.

COBBOLD.—On March 4th, at The Elms, Batheaston, Bath, the wife of C. Spencer Cobbold, M.D., F.R.C.P. Edin., M.R.C.S. Eng., prematurely, of a son.

COSENS.—On March 5th, at Oxford-terrace, the wife of Charles H. Cosens, M.R.C.S., L.R.C.P., of a son.

CROSSFIELD.—On March 3rd, at Broadstone House, Dartmouth, the wife of A. Kyffin Crossfield, L.R.C.P., of a daughter.

DUNLOP.—On March 3rd, at Stafford-street, Edinburgh, the wife of James Craufurd Dunlop, F.R.C.P.E., of a son.

MARRIAGES.

ADDISON—RIGG.—On March 1st, at Christ Church, Crouch-end, W. B. Addison, B.A. Cantab., M.R.C.S., L.R.C.P., of Tenterton Kent, to Edith, youngest daughter of the late Richard Rigg, of Crouch-end.

BARNETT—FULTON.—On the 31st December, 1892, at "Ravensclide," West Taieri, New Zealand, Louis Edward Barnett, M.B., F.R.C.S., of Dunedin, third son of A. A. Barnett, of Wellington, to Mabel Violet, youngest daughter of the late James Fulton, of the Taieri.

FOOTE—JESSETT.—On the 22nd inst., at St. Peter's, Eaton-square, by the Rev. T. W. Hardy, M.A., vicar of Erith, Kent, assisted by the Rev. R. Armitage, M.A., chaplain to the Military Chapel, Wellington Barracks, Captain Henry Bruce Foote, R.A., son of R. Bruce Foote, of Yercaud, Madras, to E. Jeanie Jessett, daughter of F. Bowreman Jessett, F.R.C.S., of 1, Buckingham Palace Mansions, S.W.

LEWIS.—NETTLETON.—On March 2nd at Bromley Common Baptist Church, Frank Benjamin Lewis, L.R.C.P., L.R.C.S., L.S.A., eldest son of Thomas Lewis, to Bessie, eldest daughter of Thomas James Ivery Nettleton, of Bromley, Kent.

REICHARDT—ATKINS.—On March 4th, at St. Nicholas Church, Sutton, Ernest Noel Reichardt, M.B. London, of Dorset House, Ewell, Surrey, to Mary Elizabeth Jessie, eldest daughter of F. D. Atkins, Esq., M.R.C.S., Chalk Pit House, Sutton, Surrey.

DEATHS.

MURRAY.—On March 3rd, at 67, Ferme Park-road, Hornsey, Daniel Murray, B.A., aged 72 years.

O'BRIEN.—On Feb. 28th, at the Villa Alberti, Florence, Richard Alfred O'Brien, M.D., late of Hong Kong.

N.B.—A fee of 1s. is charged for the Insertion of Notices of Births, Marriages and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 9th, 1893.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
Mar. 3	30·30	S.W.	45	43	55	50	43	·04	Raining
,, 4	30·16	S.W.	50	49	66	56	44	·05	Overcast
,, 5	30·26	S.W.	47	45	75	57	42	..	Cloudy
,, 6	30·35	W.	46	44	63	54	43	..	Overcast
,, 7	30·35	W.	44	43	81	56	42	..	Hazy
,, 8	30·33	N.W.	47	44	81	61	43	..	Hazy
,, 9	30·23	S.W.	43	42	69	52	42	..	Foggy

Medical Diary for the ensuing Week.

Monday, March 13.

KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.; Fridays and Saturdays, at the same hour.

ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1.30 P.M.; and on Tuesday, Wednesday, Friday, and Saturday at the same hour.

ST. MARK'S HOSPITAL.—Operations, 2 P.M.; Tuesday, 2.30 P.M.

ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 2.30 P.M.; Friday, 2 P.M.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, daily at 10 A.M.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1.30 P.M.; and each day at the same hour.

CHELSEA HOSPITAL FOR WOMEN.—Operations, 2 P.M.; Thursday, 2 P.M.

HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M.; and on Thursday at the same hour.

METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.

ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.

CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and each day in the week at the same hour.

UNIVERSITY COLLEGE HOSPITAL.—Ear and Throat Department, 9 A.M.; Thursday, 9 A.M. Eye Department, 2 P.M.

THROAT HOSPITAL (Golden-sq.).—5 P.M. Dr. R. Norris Wolfenden: Treatment of Aphonia, &c.

MEDICAL SOCIETY OF LONDON.—8.30 P.M. Mr. Bruce Clarke: The Treatment of Lupus of the Face by Free Removal and Skin-grafting with Large Flaps.—Mr. W. H. Battle: Two cases of Abdominal Section for Tumours which presented unusual characters.

Tuesday, March 14.

GUY'S HOSPITAL.—Operations, 1.30 P.M., and on Friday at the same hour. Ophthalmic Operations on Monday at 1.30 and Thursday at 2 P.M.

CANCER HOSPITAL, BROMPTON.—Operations, 2 P.M.; Saturday, 2 P.M.

WESTMINSTER HOSPITAL.—Operations, 2 P.M.

WEST LONDON HOSPITAL.—Operations, 2.30 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Skin Department, 1.45; Saturday, 9.15.

ST. MARY'S HOSPITAL.—Operations, 1.30 P.M. Consultations, Monday, 2.30 P.M. Skin Department, Monday and Thursday, 9.30 A.M. Throat Department, Tuesdays and Fridays, 1.30 P.M. Electro-therapeutics, same day, 2 P.M.

ROYAL INSTITUTION.—3 P.M. Prof. V. Horsley: The Brain.

ROYAL COLLEGE OF PHYSICIANS.—5 P.M. Dr. W. D. Halliburton: The Chemical Physiology of the Animal Cell. (Goulstonian Lecture.)

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.—Mr. Thomas Bryant: Case of Fibrous Polypus of the Prostatic Portion of the Urethra associated with Profuse Hæmaturia and Prostatic Enlargement; Removal of Growth and Recovery.—Dr. Donald W. C. Hood: An Inquiry into the Etiology of "Rotheln" (German Measles).

Wednesday, March 15.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.

MIDDLESEX HOSPITAL.—Operations, 1.30 P.M.; Saturdays, 2 P.M. Obstetrical Operations, Thursdays, 2 P.M.

CHARING-CROSS HOSPITAL.—Operations, 3 P.M., and on Thursday and Friday at the same hour.

ST. THOMAS'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour.

LONDON HOSPITAL.—Operations, 2 P.M.; Thursday and Saturday, same hour.

ST. PETER'S HOSPITAL, COVENT-GARDEN.—Operations, 2 P.M.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2.30 P.M.

GREAT NORTHERN CENTRAL HOSPITAL.—Operations, 2 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 1.30 P.M. Dental Department, 9.30 A.M. Eye Department, 2 P.M.

ROYAL FREE HOSPITAL.—Operations, 2 P.M., and on Saturday.

CHILDREN'S HOSPITAL, GREAT ORMOND-STREET.—Operations, 9.30 A.M. Surgical Visits on Wednesday and Saturday at 9.15 A.M.

THROAT HOSPITAL (Golden-sq.).—5 P.M. Mr. T. Mark Hovell: Adenoid Vegetations of the Naso-pharynx.

EPIDEMIOLOGICAL SOCIETY OF LONDON.—8 P.M. Dr. Patrick Manson: African Hæmoglobinuric Fever.

ROYAL MICROSCOPICAL SOCIETY.—8 P.M. Dr. G. M. Giles: Cystic Worms simulating the appearance of Tuberculosis.—Dr. A. Stokes: New Brackish Water Infusoria from the United States.—Surgeon V. G. Thorpe: Rotifera of China.

Thursday, March 16.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. Surgical Consultations, Wednesday, 1.30 P.M. Ophthalmic Operations, Friday, 1.30 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M. Ear and Throat Department, 9 A.M. Eye Department, 2 P.M.

ROYAL SOCIETY.—Prof. Virchow will deliver the Croonian Lecture in the Theatre of the London University at 4.30 P.M.

ROYAL COLLEGE OF PHYSICIANS.—5 P.M. Dr. C. Theodore Williams: Aero-therapeutics in Lung Diseases. (Lumleian Lecture.)

HARVEIAN SOCIETY.—8.30 P.M. Dr. H. A. Caley: A case of Simple Ulcerative Colitis.—Mr. Treves: A Series of cases of Relapsing Typhlitis.

Friday, March 17.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Eye Department, 2 P.M.
CANCER HOSPITAL (Fulham-road, S.W.).—4 P.M. Mr. F. Bowreman Jessett: Uterine Carcinoma and its Treatment.

Saturday, March 18.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; and Skin Department, 9.15 A.M.

Notes, Short Comments & Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Publisher."*

We cannot undertake to return MSS. not used.

THE POWER OF THE CORONER AND POST-MORTEM EXAMINATIONS.

A CORONER, at a recent inquest at Newnham-on-Severn, expressed himself very strongly in respect of the husband of the deceased having refused to permit a post-mortem examination which he had ordered. He sympathised with the husband, but intimated that if he persisted he would have to send him to gaol. The poor man immediately saw his error, and said he had no intention of defying the law.

L.D.S.—The question whether a dental surgeon, by virtue of his licentiateship, has a right to administer nitrous oxide gas has not yet been thoroughly determined. In case of a death, of course a coroner's inquest would have to be held. In the case of an unqualified, though registered, dentist his position is very different and far graver than that of the L.D.S. We do not hesitate for a moment in saying that no person other than a registered medical practitioner ought to administer any of the more dangerous anæsthetics—such as ether, chloroform &c.—and by so doing he places himself in an unenviable position.

THE PREMIER ON MEDICAL FEES.

To the Editors of THE LANCET.

SIRS,—It must be a comfort to the medical profession to discover that you have lost no time in drawing attention to Mr. Gladstone's statement—or, rather, misstatement—with regard to the increase of medical fees. It is both curious and unfortunate that the Premier, who is justly regarded as little short of a talking encyclopædia, and whose utterances gain European notoriety, should have fallen into an error of this description, the time having long since arrived when a reaction is so necessary in the public mind to remove the fallacious ideas in respect to medical charges. The general public have to be reminded that the majority of medical men are not by inheritance millionaires; nor are they likely to acquire such a status by supplying advice and medicine at sixpence, which in the aggregate appears to represent the majority of fees, and it is not impossible that Mr. Gladstone was confounding quantity with quality when he referred to the increase thereof. And no doubt in the former sense he would be correct, seeing that it has become a common practice for a single practitioner to run two or three establishments, which after all represent so many hybrid shops, in order to realise a so-called income, and which is equivalent to saying that men of the present day have to engage in three times the amount of practice to secure an income which could be obtained with relative ease in a past generation. What an ex-Chancellor of the Exchequer whose financial intellect has accustomed itself to regulate the purse-strings of the British Empire would think of "advice and medicine for sixpence" it is not easy to know; but, speaking as a humble practitioner, I have no hesitation in expressing an opinion that he who gives advice and medicine for sixpence, pitiable as his condition may be, nevertheless has a much greater advantage than he who takes it, and of such an one it may literally be said that "it is more blessed to give than receive."—I am, Sirs, yours faithfully,

London, March 6th, 1893. SIXPENCE.

MEDICAL ETHICS AT BURTON.

THE following circular has been forwarded to us:—

"181, Horninglow-street, Burton-on-Trent, November, 1891.

"I have the pleasure to inform you that, having resigned my position as Senior Surgeon to the Friendly Societies' Association, I am now carrying on my profession as physician and surgeon at the above address. The prescription, case and other books used in the practice carried on for so many years by Messrs. R. S. and (late) Paul Belcher have, with the nucleus of their practice, been transferred to me.—I am, yours obediently,

"JOHN OLDERSHAW,

"Member of the Royal College of Physicians; Physician and Licentiate in Medicine; Diplomate in State Medicine; Certificate in Sanitary Science; Licentiate of Royal College of Physicians, Edinburgh; Licentiate of Royal College of Surgeons, Edinburgh; Licentiate of Faculty of Physicians and Surgeons, Glasgow; Licentiate in Midwifery and Diseases of Women, King and Queen's College (by examination); late Assistant Clinical Physician to Royal Infirmary, Liverpool; Surgeon to the Dispensary for Diseases of Women and Children, Liverpool."

Mr. Henry Morris.—Our correspondent should consult the columns of *Le Progrès Médical*—Le Numéro des Étudiants, Nov. 5th, 1892.

"THE UNITED STATES AS A FIELD OF PRACTICE."

To the Editors of THE LANCET.

SIRS,—Now and again one sees in the columns of THE LANCET the question asked as to what are the chances of obtaining a practice in the United States. "Viajaro" is the most recent inquirer, and I observe in your issue of Feb. 11th a response (if a response it can be called) by "Yale University." To state that "there is always room at the top" is, I imagine, scarcely the kind of information "Viajaro" would like to receive. Most people (and they need not be very astute ones at that) are aware that merit sooner or later asserts itself in all countries, the United States included. But I think "Yale University" will concede, after all, that America is the quack's El Dorado and that competing with quacks is neither dignified nor remunerative. As a rule, the quack will get the better of the struggle; for he will descend to methods that an honourable and conscientious member of the profession can neither countenance nor practise. I agree with "Yale University" that the newly arrived addition to our ranks will be dubbed "Doctor," "whatever his diploma"; but at the same time I may as well remind "Viajaro" that the title of Doctor is a very cheap one in this country, and that it is applied to common farriers, patent medicine pedlars and a host of druggists. The ratio of legitimate practitioners to the population in the States is 1 to 500, and this does not include the great number of humbugs that flood the country. Counter prescribing by druggists is very extensively practised, and there is a great deal of "self-doctoring" carried on by the average American. I seldom see a patient who has not been administering this or that nostrum to himself before sending for me. To give an idea of the enormous sale of patent medicine in this country, I may state that from one-third to one-half of the space of the average chemist's shop is allotted to these remedies and that they are for sale at every grocery. There is comparatively little dispensing done by doctors; but undoubtedly for self-protection the doctor will have to do more of it, and the feeling among practitioners is growing rapidly in favour of reviving this old custom. The fees are fair, and, generally speaking, doctors' charges are made upon the principle of getting as much as you can; but it must be remembered that a doctor here considers he does extraordinarily well if he collects two-thirds of his accounts. If patients do not wish to pay it is seldom that they can be compelled to do so. Poverty is very much on the increase in the United States and charitable institutions likewise. "Viajaro," if he is bent on emigration, had better betake himself to a British colony, where things are fashioned after the mother country. The last man desiring to emigrate to the United States ought to be the medical practitioner.

I am, Sirs, yours faithfully,

A BRITISH PRACTITIONER TWENTY YEARS
February, 1893. RESIDENT IN THE STATES.

AMENITIES BETWEEN MEDICAL MEN.

THE rule by which medical men befriend other practitioners and their families is a very good one and should be well observed. We are asked if it is in accordance with medical etiquette if, when a medical man takes his brother to a consultant, the consultant is to charge the full fee, the medical men both having been fellow students of the same hospital, and the brothers being sons of a medical man. It seems to us that the answer would depend much on the means of the lay brother. The consultant should not be deprived of his fee if the patient was well able to pay, although he did happen to be brother and son to medical men. A good rule should not be strained in its application. On the other hand, the consultant in such cases generally contrives to ascertain the facts and to act considerately.

"INSOLUBLE TABLOIDS."

To the Editors of THE LANCET.

SIRS,—I am much obliged for your insertion of my letter on the above subject. There is, however, a mistake in the letter, probably owing to my rather illegible writing, which makes it read badly. "Data of motion" should be *date of invasion*.—Yours truly,

March 7th, 1893. WILLIAM G. GROVES.

TESTING THE VIRULENCE OF CHOLERA BACILLI.

THE experiment of Professor Pettenkofer, designed to test the virulence of the comma bacilli, has been repeated by Dr. Hasterlik and three other physicians at the Pathological Institute, Vienna. The cultures used were derived partly from German and partly from Buda-Pest cases of cholera, and the quantity of culture employed in each case was one cubic centimetre. In two experiments 100 grammes of 1 per cent. solution of bicarbonate of soda were taken before swallowing the culture, with the design of neutralising the acidity of the stomach. In two of the experiments only out of the six was diarrhœa observed, and that merely in a slight form; whilst in the remaining three no effect whatever was produced. The defecations were examined microscopically and revealed the presence of bacilli.

M.D.—Each particular agreement must be dealt with on its own merits, according to the wording of the document and attendant circumstances. The "prevalent opinion" suggested by our correspondent is not, we think, well founded.

"A TOO INDESTRUCTIBLE BANDAGE."—(AN IRON RING USED AS A TRUSS.)

To the Editors of THE LANCET.

SIRS,—In your issue of Feb. 25th was recorded the case, related in a Spanish medical journal, of a man who applied an iron ring around his external genitals to keep up some dressings about his groins. In 1877 a somewhat similar case was treated at the old South Devon and East Cornwall Hospital here. A fisherman who had an inguinal hernia broke his truss whilst at sea, and fearing that the rupture would descend into the scrotum he passed with some difficulty a wrought iron ring over his external genitals. For one day all went well and the ring formed an admirable and efficient truss; but he then unfortunately struck his scrotum against the gunwale of his boat and the parts swelled very rapidly. A few days afterwards, on admission into hospital, his scrotum and penis were found to be enormously swollen and œdematous. It was at once evident that the only means of relieving the patient's condition was by cutting through the ring with a file. The parts were first incised to relieve the œdema. I cannot remember how many hours it took us to cut through the ring, but it was a very arduous task for us and a very painful ordeal for the patient. There was afterwards considerable sloughing; but eventually a good recovery was made, and the patient was discharged with a well-fitting truss. The ring was half an inch thick and the file was used obliquely.

I am, Sirs, yours faithfully,

Plymouth, March, 1893. J. ELLIOT SQUARE, F.R.C.S.

MEDICAL ADVERTISEMENTS AT THE EAST-END OF LONDON.

A GENERAL PRACTITIONER sends us specimens of two bills which had been left at the houses of his patients, one issued by a medical graduate—Dr. Wallace, M.B., C.M., 325, Old Ford-road—from whom better things might have been expected. Medicine and advice are offered for 6*d.*, and midwifery and diseases of women are boasted of as a specialty, but the fee for midwifery is from 10*s.* 6*d.* The other bill advertises the Roman-road Provident Dispensary and Drug Stores, 224, Roman-road. "Proprietor, Dr. Taynton; resident medical officer, Dr. Wilson."

GINDERS FUND.

To the Editors of THE LANCET.

SIRS,—As the result of the appeal on behalf of the widow of the late A. Gerard Ginders, L.R.C.P.Edin., who went down in the ill-fated *Roumania*, the following sums have been received:—

THE LANCET Relief Fund	£25	0	0
British Medical Benevolent Fund	10	0	0
Donations	60	0	0
Total	£95	0	0

The committee consider the sum inadequate for the purpose they have in view—namely, the furnishing a house for Mrs. Ginders to take in lodgers,—and would earnestly appeal for further contributions. Remittances to be sent to Dr. Quintin McLennan, 191, Pitt-street, Glasgow.

I am, Sirs, yours faithfully,

HENRY E. CLARK
Glasgow, March 7th, 1893. (Convener of Committee).

"TAKING THE AIR."

To the Editors of THE LANCET.

SIRS,—There is in many towns, among the poorer class of invalids, a great want of some cheap mode of "taking the air." The donkey- or bath-chair are perforce well enough for the helpless and unwieldy; but they are uncomfortable, "too invalid-like," and too expensive for the ordinary convalescent, for the phthisical or the anæmic &c., for whom fresh air and sunlight are so essential. I would therefore suggest that the "rickshaw," so much used and valued abroad, might be introduced with great advantage to both the public and the unemployed. With a pneumatic tyre and a moderate charge its success would be assured, and the cycle depôts would find their wear and tear infinitesimal and damage to them *nil* if added to their stock.

I remain, Sirs, yours faithfully,

March, 1893. M.D.

THE RIGHT OF AN APOTHECARY TO CALL HIMSELF SURGEON.

A CORRESPONDENT objects much to an apothecary who has recently settled near him and taken a chemist's shop calling himself "surgeon." He does not say what is the date of the licence. A apothecary under the Act of 1886 is qualified in surgery as well as in medicine, and is to all intents and purposes a surgeon. If the licence dates further back to a time when it did not involve qualification in surgery the use of the title is illegal. We should scarcely advise our correspondent to "take any action" in the matter. The licentiate is on the Register, we presume, and the limitation of his licence, if it be limited, will perhaps appear one day in the county court if he attempts to recover charges in a surgical case.

Dr. F. Evans (Cardiff).—The condition would most probably prove a disqualification; but the Military Secretary, Horse Guards, might be officially applied to.

TABLOIDS.

To the Editors of THE LANCET.

SIRS,—Permit me through the columns of THE LANCET to suggest a method of employing hypodermic tabloids which I have practised for the last year. By simply placing them under the tongue I find that they are so quickly absorbed that their full physiological effect is as quickly produced as by subcutaneous injection. Since I discovered this mode I have seldom needed to resort to the syringe, the simpler plan having invariably proved equally reliable. The only objection is the taste, and I have written to some well-known makers with a view to remedying this defect. Even as now made I am quite convinced that the simplicity and efficacy of this method will secure for it a wide adoption.

I am, Sirs, yours truly,

Loughborough, March 7th, 1893. WM. PAULSON, L.R.C.P. Lond.

CAN MEDICAL PRACTITIONERS VEND THEIR PRESCRIPTIONS AS PATENT MEDICINES?

WHEN a medical man sells his prescriptions in a commercial way to capitalists, or uses them for creating patent and secret remedies, to be advertised and turned to commercial account for his benefit, he abandons all professional paths, and must not be surprised if, on proof being given, the medical authorities of the profession withdraw his diploma or his registration. He would have no right of complaint, for in so acting he would proclaim that he had ceased to rely on professional methods of success, and had adopted others inconsistent with the retention of his professional position.

A. B.—Our correspondent may justly complain of the terms of the letter he received in explanation. They are not courteous and not such as the busiest man is justified in writing to an applicant for an assistantship.

THE "MEDICAL DIRECTORY."

To the Editors of THE LANCET.

SIRS,—I have to spare a set of Churchill's "Medical Directory," complete since 1847 (first and second vols., 1845 and 1846, missing), which I should be very glad to give to any medical library wanting them if you could make the fact known. I am, Sirs, yours truly,

Birmingham, March, 1893. LAWSON TAIT.

THE Prudential Assurance Company, Limited, has issued a report and accounts for the year 1892 which disclose an unprecedentedly large measure of success, and justify it by the discovery of a very high standard of efficiency and economy in the management of the enormous business transacted by the company. Henceforth an annual valuation will take the place of the quinquennial operation which has heretofore sufficed, and the change is inaugurated by a valuation report now submitted, together with a customary report upon the business of the year. The very favourable criticism which we have felt at liberty to pass upon the one may be extended to the other of these statements.

THE following card has been sent to us:—

"Dr. Walter (of 37, Noel-street) attends at S. Cook's, Dispensing Chemist, 76, Radford-road, Hyson-green, from 3 to 4 P.M. daily (Thursday excepted). Private consulting room."

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received:—*Arms and Explosives, Court Journal, Lyttelton Times (New Zealand), West Ham Herald, Port Elizabeth Telegraph (Cape of Good Hope), The Weekly Press (Pretoria), The Cambrian (Swansea), The Morning, Retford, Worksop and Gainsborough News, Manx Sun (Douglas, Isle of Man), Fulham and West London Observer, Western Chronicle, South Wales Echo, Hampshire Advertiser, Eastbourne Standard, Devon Gazette, Democrat (Boston, Mass.), Alliance News (Manchester), Birmingham Gazette, Wolverhampton Chronicle, Bath Gazette, Sussex News, Leicester Post, West Sussex Gazette, Dundee Courier, Times of India, Cape Argus, Pioneer Mail, Natal Mercury, Shanghai Mercury, Irish Times, Galignani's Messenger, Le Temps (Paris), Berwick Journal, Sunday Times, South Wales Daily News, Salisbury Journal, Pembroke City Guardian, Armagh Guardian, Catholic Herald.*

Communications, Letters &c. have been received from—

A.—Dr. Julius Althaus, London; Dr. J. Arlidge, Stoke-on-Trent; Mr. H. Audeoud, Geneva; Mr. W. S. Alexander, Sheffield; Mr. H. Allingham, London; Messrs. Allen and Hanburys, London; Antiseptic, London; *Arms and Explosives*, Editor of; Alpha.

B.—Dr. Ed. Blake, London; Dr. T. Bond, Leamington; Dr. Buckley, Oldham; Brigade-Surg.-Lt.-Col. J. P. H. Boileau, Bengal; Dr. Bergonie, Bordeaux; Mr. W. H. Brown, Leeds; Mr. R. J. Bedford, Kegworth; Mr. G. T. Barnard, Aberdare; Mrs. Brooke Northampton; Birmingham General Hospital; Blackburn Infirmary; Bartholomew, London.

C.—Prof. M. Charteris, Glasgow; Dr. Jas. Cagney, London; Mr. Collingwood, London; Surgeon-Major W. E. Chester, Alexandria; Mr. Edward Crutchloe, London; Mr. Colman, London; Mr. Croke, Beverley; Mr. T. Cooke, London; Mr. W. Coode St. Austell; Mr. Wm. Crookes, Islington; Messrs. Castle and Lamb, London; Children's Hospital, Sheffield; Croton, London.

D.—Dr. A. Dixey, London; Signor Carlo Ducci, London; Dr. Ed. Deanesly, Wolverhampton; Dispute.

E.—Messrs. Evans, Sons and Co., Liverpool; E. P., London.

F.—Prof. M. Foster, Cambridge; Dr. Foster, London; Mr. George Foy, Dublin; Messrs. Fullagar and Hutton, Bolton; Messrs. Fassett and Johnson, London.

G.—Dr. Clement Godson, London; Prof. Gairdner, Glasgow.

H.—Mr. J. C. Humphreys, London; Mr. Heywood, Manchester; Mr. C. B. Harness, London; Messrs. Harrison and Brass, Elgin; *The Hospital*, London; H. D. S.; Hartlepool Hospital.

J.—Sir George Johnson, London; Dr. F. Fitzherbert Jay, London; Dr. Harris Jones, Pa., U.S.A.; Mr. W. H. Jalland, York; Mr. G. R. Jesse, Macclesfield; Mr. Henry Jackson, Coventry; Messrs. Judd and Co., London; J. M. R., London.

K.—Dr. R. Kirk, Partick; Messrs. Krohne and Sesemann, London; Messrs. R. A. Knight and Co., London.

L.—Dr. F. J. Little, London; Mr. H. K. Lewis, London; Messrs. T. H. Lloyd and Co., Leicester; Liverpool Royal Infirmary.

M.—Mr. Mould, Twickenham; M.D.; Maltine Manufacturing Co., London; M. E. B., London; Medicus, Coventry; Manchester Royal Infirmary.

N.—Dr. G. Nowland, Berlin; Dr. J. Nivison, Castle Douglas, N.B.; Mr. C. B. Norman, London; N. S.

O.—Dr. Jas. Oliver, London.

P.—Dr. F. A. Purcell, London; Dr. F. Page, Newcastle-on-Tyne; Mr. Chauncy Puzey, Liverpool; Mr. E. Park, Cardiff.

R.—Dr. R. Richardson, Benenden; Surg.-Capt. J. D. Reckitt, Shorncliffe; Messrs. Robertson and Scott, Edinburgh; Messrs. Reynolds and Branson, Leeds.

S.—Dr. Joseph Soffiantini, London; Dr. Sydney Stephenson, London; Dr. Jas. Shaw, Liverpool Dr J P. Steele, Florence; Prof. W. Smith, London; Mr R. Sheward, Eastbourne; Mr F. A. Southam, Manchester; Mr J. Elliot Square, Plymouth; Mr. W. Percy Slaney, London; Mr. F. S. Sheppard, Durham; Mr. H. Sell, London; Mr. F. W. Sears, London; Mr. W. Stallard, Worcester; Stockport Infirmary; A Surbiton Practitioner.

T.—Dr. W. J. Tyson, Folkestone; Dr. Taylor, Johnston; Rev. A. Tooth, Croydon; Mr. F. Tratman, Bristol.

U.—Miss Philippa F. Upton, Southfields; Ubique, London.

V.—Viator, London.

W.—Dr. W. Hale White, London; Dr. Wethered, London; Dr. J. Wilson, Liverpool; Dr. Mackie Whyte, Dundee; Dr. W. Woodward, Worcester; Mr Francis H. Wood, London; Wesleyan Conference Office, London.

Y.—Mr. N. E. Yorke-Davies, London.

Letters, each with enclosure, are also acknowledged from—

A.—Dr. J. Adamson, co. Durham; Mr. C. B. Allen, Kilburn; Messrs. Armour and Co., London; Amicus, London; A. W. X., London; A. R. P., London; Amicus, Leicester.

B.—Dr. W. Beck, Westmoreland; Dr. L. R. Barnet, North Dunedin; Mr. M. N. Byrn, York; Mr. J. Breach, Newbury; Mr. G. R. E. Bonsall, Aberystwith; Mr. C. Butler, Brixton; Mr. J. Barry, Stockton-on-Tees; Mr H. H. Bough, Hull; Mr. J. Blackburn, Barnsley; Mr. W. S. Battiss, Southsea; Mr. R. O. Bunting, Southsea; Mr. S. J. Brooks, Manchester; Miss A. Belcher, Bermondsey; B. C., London; B.A., M.B., Kilburn; Barnwood House Hospital, Gloucester; Bridgewater Infirmary.

C.—Dr. C. S. W. Cobbolt, Bath; Dr. J. Cooke, Christchurch, N.Z.; Mr. B Culpeck, Croydon; Mr. J. Chivers, Mitcheldean; Mr. J. Cochrane, Greenock; Mr. G. F. Carter, Dundee; Messrs. Condy and Mitchell, London; Messrs. Curry and Paxton, London; College of Preceptors, Bloomsbury. Chichester Infirmary; Children's Hospital, Pendlebury; C. E. A., London; Cash, London; C. D. V., London; Coldwell Manufacturing Co., London; Caldom, Wanstead.

D.—Mr. W. H. Davies, Newport; Mr. R. A. Dove, Carlisle; Mrs. Danby, Lincoln; Devon County Asylum; D., London; Dundee Royal Infirmary; Dentist, London.

E.—Edinburgh School of Medicine.

F.—Mr. N. H. Forbes, Tunbridge Wells; Mr. G. W. Featherstone, Manchester; Fairweather, Pocklington; Fides, London.

G.—Mr. J. Good, Robertsbridge; Glasgow Western Medical School; G.B.G., London; Gunner, London

H.—Mr. W. Hay, Hull; Mr. R. H. Hutton, Twickenham; Mr F. F. Hale, Chesterfield; Mr. O. Holst, Bath; Mr. J. E Halpin, South Normanton; Huntingdon County Hospital; Hospital for Women, Soho square; Hamilton Association, London.

I.—Ingham Infirmary, S. Shields.

J.—Dr. D. M. Jones, Mareke-by-Sea.

K.—Messrs. Kerin and Lynam.

L.—Mr. E. D Lumsden, Sheffield; Messrs. Lewis and Weatherbe, Withernsea; Liverpool Northern Hospital; Licentiate, London; Lunacy, London; L.R.C.P., Birkenhead; L.R.C.P., London.

M.—Dr. R. Main, East Ilsley; Dr. J. McIane, Melbourne; Mr. H. Murray, Hornsey; Mr. W. R. Mumford, London; Mrs. Masters, Boscombe; Medicus, Coventry; M. L., London; Mater, Highgate-road; M.R.C.S., London; Madden, London.

N.—Dr. A. T. Norton, London; Mr. R. G. Naylor, Audlem; Mr. J. Nicholson, Kinbrace; National Provident Institution, London; North Staffs. Infirmary; Northumberland County Asylum.

O.—Mr. M. O'Brien, Bowes-park; Onyx, London; Omega, London; *Oldham Standard*.

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